

# **The prevalence of psychiatric and physical morbidity in elderly sentenced prisoners in England and Wales**

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## Abstract

**Background:** The number of elderly prisoners has been increasing in Western countries over the past decade. In England and Wales, the population of those aged 60 and over in prison has more than trebled in the last decade, and there are over 1000 elderly men in prison. There are no published studies of psychiatric morbidity in this population.

**Method:** A stratified sample of 203 male sentenced prisoners aged over 59, from 15 prisons in England and Wales, representing one in five men in this age group, was interviewed using semistructured standardised instruments for psychiatric illness, personality disorder, and acute and chronic physical ill health. In addition, major illnesses and types of medication were recorded from their prison medical notes and prison reception health screen. The psychiatric characteristics of the sex offenders interviewed were compared with the non-sex offenders.

**Results:** 53% (95% CI, 46-60%) of the elderly prisoners had a psychiatric diagnosis. The most common diagnoses were personality disorder (30% [24-36%]) and depressive illness (30% [23-36%]). No differences were found between the sex offenders (n=101) and the non-sex offenders (n=102) in the rates of psychiatric illness or personality disorder. Significant differences emerged at the level of personality traits with sex offenders having more schizoid and obsessive-compulsive traits compared with non-sex offenders. 85% of the elderly prisoners had one or more major illnesses reported in their medical records, and 83% reported at least one chronic illness on interview. The most common physical illnesses were cardiovascular, musculoskeletal and respiratory.

**Conclusions:** The prevalence of depressive illness in this sample of elderly male prisoners was five times greater than found in other studies of younger adult male prisoners and community elderly men. The rate of physical illness in elderly prisoners was also higher than in other studies of younger prisoners and in surveys of the general population of a similar age. The growing numbers of elderly in prison pose specific challenges for prison health care services. In particular, underdetected, undertreated depressive illness in elderly prisoners is an increasing public health problem.

## Details of contributions

I confirm that I have composed this thesis, and that I have made a substantial contribution to the work presented. I confirm that I have not submitted the thesis in candidature for any other degree, diploma or postgraduate qualification.

I am very grateful to my supervisors Professors Tony Hope and Robin Jacoby, and Dr Ian O'Donnell, who devised the project, for inviting me to work with them and for their advice and encouragement throughout the study. My specific contributions included choosing the interview instruments, developing the coding sheet (see appendices), and designing the sampling strategy (which was different to the original one in the Wellcome grant proposal). I collected the data and did all the interviewing, and conducted the data analysis. Together we discussed the methodology, results and conclusions, and the implications of the findings. The study was supported by a grant from the Wellcome Trust to Robin Jacoby, Tony Hope and Ian O'Donnell, and undertaken while I was a clinical research fellow at the University Department of Psychiatry, Warneford Hospital, Oxford.

Part of the first chapter (on the elderly and crime) was written under Robin Jacoby's supervision, and forms part of a chapter for a textbook.<sup>1</sup> Sections of the discussion on psychiatric morbidity, and sex offenders are based on papers that I drafted and were re-written in discussion with Robin Jacoby, Tony Hope, and Ian O'Donnell.<sup>2 3</sup> The discussion on physical illness is drawn from a paper written with Robin Jacoby, Tony Hope, Ian O'Donnell, and Mary Piper.<sup>4</sup> Appendix 3 is a paper that I wrote with medical ethicist John McMillan (Hastings Center Junior Research Fellow, University College, University of Oxford) and Ian O'Donnell that has been published in *The Journal of Medical Ethics*.<sup>5</sup> Appendix 4 is a paper that I wrote with Professor John Danesh (Department of Public Health and Primary Care, Institute of Health Sciences, University of Cambridge) that was published in *The Lancet*.<sup>6</sup>



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# **The prevalence of psychiatric and physical morbidity in elderly sentenced prisoners in England and Wales**

## **Preface**

### **The burden of the problem**

Worldwide there are between 30-50 million people in custody, of whom 9 million are prisoners and the remainder in police custody.<sup>1</sup> In most Western countries, there have been large increases in prison populations over the last decade. In England and Wales, for example, there were 45 000 prisoners in 1990, which has steadily increased to over 65 000 a decade later.<sup>2</sup> America now has 2 million prisoners.<sup>3</sup>

The number of elderly persons has also been increasing worldwide, and 16% of the UK population is over 65 years old. This has also been reflected in the numbers of elderly prisoners and also their proportion of the total prison population. In England and Wales, there are now over 1000 men over 60 years old in prison. In Canada, for example, older prisoners are the fastest growing age group.

Mental illness in prisoners has been studied since Glueck's landmark study in 1918 in Sing Sing prison, New York.<sup>4</sup> However, psychiatric research in prisoners has become more prominent in the last decade due to the publication of some well-designed studies in England and Wales that have shown that the prevalence of mental disorders in remand and sentenced prisoners is over 50%.<sup>5-7</sup> These studies have also highlighted that much of this morbidity is undetected and untreated.



disorders in remand and sentenced prisoners is over 50%.<sup>5-7</sup> These studies have also highlighted that much of this morbidity is undetected and untreated.

The aim of this study is to determine the prevalence of psychiatric and physical morbidity in elderly sentenced prisoners. This would appear to be the first time that this question has been investigated. There is one study of elderly remand prisoners in England from 1988, which found that about half of the sample had active symptoms of a mental illness, but it based its findings on retrospective case notes diagnoses of mental illness in a sample of only 23 men.<sup>8</sup>

## **Approach**

The question of determining the prevalence of psychiatric and physical morbidity of elderly prisoners has been approached by drawing on the methodological strengths of the previous UK studies of prisoners. A representative and random sample of prisoners has been interviewed in a number of different prisons using standardised semi-structured interviews that allow for comparison with relevant populations (younger prisoners and community elderly).

## **Contents**

This thesis covers the following areas. The first chapter consists of two narrative reviews that provide some relevant background to this study. The first is on the relationship between the elderly and crime, and explores the rates of psychiatric illness at different stages of the criminal justice system. It also discusses the association between various psychiatric disorders and criminal behaviour in the



elderly. The second is a review of the epidemiology of the physical and psychiatric morbidity of prisoners. This is followed by the methods chapter that discusses the sampling technique, the properties of the instruments used, and how prisoners were accessed. The results are presented mainly in the form of tables. The main results focus on the demographic status of elderly prisoners, their psychiatric morbidity, and their physical illnesses. Two categories of prisoners are investigated in more detail: sex offenders and murderers. The concluding chapter puts these findings into perspective, comparing these findings with what is known about younger male prisoners and community elderly men. Service implications are outlined and ethical issues arising briefly discussed. Appendix 1 is a copy of the interview schedule used to collect demographic and criminological information and data on physical illnesses. Appendix 2 includes the additional questions that the sex offenders were asked about their offence. Appendices 3 and 4 are copies of papers, though not directly related to the aims of the study, that were written as a consequence of undertaking this project. The first is a discussion of the ethical and legal implications of detaining an individual with dementia. The second is a systematic review and meta-analysis of the prevalence of serious mental disorder in prisoners.

## Acknowledgements

I am very grateful to my supervisors Professors Tony Hope (Department of Primary Care and Public Health, Institute of Health Sciences, University of Oxford) and Robin Jacoby (Section of Old Age Psychiatry, Department of Psychiatry, University of Oxford), and Dr Ian O'Donnell (Institute of Criminology, Faculty of Law, University College Dublin), for inviting me to work with them and for their mentoring, supervision, encouragement and counsel throughout the study and in writing up subsequent papers and this thesis. Professor Jacoby was kind enough to allow me to remain attached to the Section of Old Age Psychiatry after the project ended and for inviting me to co-author with him the forensic psychiatric chapter for *Psychiatry in the Elderly*. I gratefully acknowledge the support of the Wellcome Trust in the form of a project grant to Professors Jacoby and Hope, and Dr O'Donnell.

In addition, there are a number of other individuals that assisted with parts of the study. I am particularly grateful to Professor John Danesh (Department of Public Health and Primary Care, Institute of Health Sciences, University of Cambridge) for his advice on sampling and methodology. Dr Pat Yudkin (Department of Public Health and Primary Care, Institute of Health Sciences, University of Oxford) kindly assisted with power calculations. Drs Janet Keene and Sean Whyte (Research Fellows, University Department of Psychiatry, Warneford Hospital, Oxford) helped with some of the statistical analysis. Lynda Barnes provided administrative and secretarial assistance for the duration of the project. Cathy Sherratt (Institute of Human Ageing, University of Liverpool) converted the Geriatric Mental State (GMS)

results to DSM diagnoses. Professor John Copeland (Institute of Human Ageing, University of Liverpool) gave useful advice about interpreting the GMS results, and Professor Jeremy Coid (Department of Forensic Psychiatry, St Bartholemew's Medical School) did so with the Structured Clinical Interview for Personality Disorders (SCID-II). Dr Celia Taylor (Institute of Criminology, University of Cambridge and Consultant Forensic Psychiatrist, Kneesworth House) and Nicola Singleton (Senior Statistician, Office for National Statistics) were helpful in the planning stages of the project explaining details of the prison projects in which they were involved. Hassan Hassan, Christopher Cullen, and Kay Carly, from the Research and Development Directorate of the Home Office, provided information on all elderly prisoners in the prison system and other criminological statistics that were used for the introduction. Dr Mary Piper, a public health consultant to the Prison Health Service, provided valuable advice throughout the project. Dr Mike Longfield, then head of Prison Health Care at the Home Office, kindly wrote to the prison governors involved. Dr Lindsay Thomson, senior lecturer in forensic psychiatry, my advisor from Edinburgh University, was supportive throughout and made valuable comments on drafts of this thesis. I am grateful to all the governors of the prisons I visited, the prison health care staff and prison officers that assisted, and the prisoners that participated in the study.



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## Introduction

In recent decades, increasing attention has been given to elderly offenders. This has been reflected in research, media attention, and international meetings. This interest has been primarily driven by the increasing numbers of elderly offenders, but also reflects the widespread acceptance of the general principle that the health care needs of elderly persons are different, and that these needs should be met in a manner specific to the elderly. This study was undertaken to examine some of the implications for prisons posed by increasing numbers of elderly offenders, and to examine the health care implications, particularly psychiatric ones, of elderly men in prison.

This chapter consists of two related narrative reviews. The first review is on crime and the elderly, and will explore the issues of how much crime elderly persons commit, what sort of offences they carry out, and whether and what type of psychiatric associations exist. The second review is on the physical and mental health of prisoners, and provides background to the main aim of this thesis – to determine the prevalence of physical illness and psychiatric morbidity of elderly sentenced prisoners.

# The elderly criminal

## How much crime?

With increasing numbers of elderly people in Western countries, one would expect the number of elderly criminals to rise. However, estimating the number of elderly criminals partly depends on the type of criminal statistics gathered. A number of issues determine prevalence rates. First, there are varying amounts of unreported and undetected crime. This may impact more on the official statistics on the elderly victims of crime than it does on estimating the number of elderly criminals. Second, there is no consistent definition of what “elderly” means in relation to offending, with various studies respectively including those over 50, 55, 60, or 65 years old. Third, there are potential differences in the rates of cautioning depending on the age of the criminal. However, those aged over 60 are as likely to be cautioned as younger adults (see table 1.1). This has changed over recent times: in 1993, the caution/conviction rate in the over 60s was 2.4.<sup>1</sup> For the purposes of this introduction, I have used conviction rates for those aged 60 years and older in discussing crime in the elderly. This has the advantage of allowing for comparisons across different time periods and countries, as policies over the threshold for conviction are probably less likely to vary within and between countries, than they are for cautioning and sentencing.

**Table 1.1: Convictions and cautions by age for men and women in England and Wales,1998 (Source: Home Office 2000 - Cm 4649, HMSO, London)**

Age Band	10 to13	14 to 59	60+
Convicted	5822	1434131	17613
Cautioned	29625	254339	3920
Cautioned/Conviction	5.1	0.2	0.2

So what is the impact of the elderly on crime? Overall it is low. Tables 1.2 and 1.3 (see next page) indicate that less than 1% of convictions were to those over 60 years old. Another important question is whether the total number of convictions has been increasing. From English and Welsh statistics, the evidence points towards a large increase. In 1998, there were 17613 convictions in the elderly compared to 2044 in 1993.<sup>1</sup> Such convictions have also been increasing as a proportion of the total number of convictions: in 1993, 0.7% of the total convictions were in those over 59; in 1998, this had risen to 1.2%. This increase is reflected in the number of incarcerated elderly. The numbers of elderly prisoners has doubled from 442 in 1993 to 1043 in 1998.<sup>2,3</sup> This partly reflects overall increases in the sentenced population in England and Wales, which rose from 37000 to 50000 in the same time period. However, the proportion of those who were aged over 59 in prison has also doubled in a decade to about 2% (see table 1.4). A similar trend has been observed in America, where the number of prisoners aged 55 and over grew by over 50% from 1981 to 1991,<sup>4</sup> and where there are about 43,000 sentenced men over 55 in prison.<sup>5</sup> In Canada, the growth in the population of older offenders in prison is more than ten times the growth of the population of younger offenders.<sup>6</sup> The number of receptions of elderly men to prisons in England and Wales has also increased but not as fast the numbers inside prison. In 1998, there were 661 receptions of those aged over 59 in prison, compared to 339 in 1993.<sup>2</sup> This reflects what criminologists call “punitive bifurcation” whereby those in prison are staying in for longer sentences, while the admission rates are growing less quickly.



**Table 1.2: Males found guilty of indictable offences in England and Wales in all courts 1998 (Source: Home Office 2000 - Cm 4649, HMSO, London)**

Age Band	10 to 20	21 to 29	30 to 39	40 to 49	50 to 59	60 to 69	Total
No. of Offences	95088	108630	60550	19409	7102	2170	292949
% of Total	32.46	37.08	20.67	6.63	2.42	0.74	100

**Table 1.3: Females found guilty of indictable offences in England and Wales in all courts 1998 (Source: Home Office 2000 - Cm 4649)**

Age Band	10 to 20	21 to 29	30 to 39	40 to 49	50 to 59	60 to 69	Total
No. of Offences	13579	17573	10989	3748	1176	256	47321
% of Total	28.70	37.14	23.22	7.92	2.49	0.54	100

**Table 1.4: Rise in population of men aged 60 and over in prison establishments in England and Wales from 1989 to 1999 expressed as a percentage of males of all ages (Home Office 2000 - Cm 4805. HMSO, London)**

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
% of all ages	0.94	1.05	1.17	1.29	1.39	1.51	1.59	1.69	1.75	1.8	2.15



## **What sort of crime?**

Although the elderly are capable of committing almost any crime, serious crime is rare. To take two examples: of the 904 persons suspected of homicide in England and Wales in 1998, only 34 were committed by persons aged over 59 years, and, of the 673 rapes, 54 involved elderly men.<sup>3</sup>

In England and Wales, within their age group, half the convictions for men aged over 59 are for two offences: theft and handling, and sexual offences. Compared to younger age groups, elderly men have proportionately more convictions for sexual offences, and for fraud and forgery. They are less likely to be convicted of violent (non-sexual), drugs related offences, and burglary (see table 1.5). Table 1.6 shows the percentage of convictions in older men set against those of younger age bands for respective offences groups. It shows that, for all offences apart from sexual ones, older men are convicted of less than 2% in each offence category. The two offences in which the proportion of elderly men convicted has increased are sexual ones (10.0% in 1998 compared to 7.4% in 1993) and convictions for indictable motoring offences (1.7% in 1998 compared to 0.3% in 1993).

Table 1.7 shows the offence categories that attracted sentences of imprisonment for men of all ages in 1999. The large number of sexual offences in the elderly men is notable. Sexual offences as a proportion of all offences committed by a respective age group greatly increases from young to old (table 1.8 – this table includes both remand and sentenced prisoners). In prison in England and Wales, about half of the elderly sentenced male prisoners are sexual offenders – a proportion that has been increasing over the last decade. In 1993, 43% of the sentenced male prison population in England and Wales of over 59s were sexual offenders, and this has risen in 1998 to 49%.<sup>3</sup> Large numbers of incarcerated elderly sexual offenders are

also found in other Western countries. In Canada, for example, half of the male sentenced prison population of the over 59s are sexual offenders.<sup>6</sup> In the community, elderly sexual offenders are also a significant group. One study of men referred to a community treatment programme in England for sexual offenders found 15% were over the age of 60.<sup>7</sup>

There are two main conclusions that can be drawn from this review of elderly offending. The first is that conviction rates for the elderly have increased, both in absolute numbers and as a proportion of all convictions. Allied with changes in sentencing policy, this has led to large increases in the number of elderly prisoners. The second conclusion is that sexual offending is an important category in the elderly. Sexual offenders make up half the elderly prison population, and commit 10% of all sexual crimes convicted in England and Wales.

**Table 1.5: Patterns of convictions in young and old males as percent of total offences in their own age group, England and Wales 1998 (Source: Home Office 2000 - Cm 4649, HMSO, London)**

Age Band	10 to 20	21 to 29	60 to 99
Violence against person	11.36	10.39	9.86
Sexual offences	0.79	0.69	20.97
Burglary	15.56	9.32	1.98
Robbery	3.32	1.16	0.14
Theft and handling	37.93	33.09	30.60
Fraud and forgery	2.62	4.90	9.26
Criminal damage	4.05	2.97	1.75
Drugs	10.61	17.73	5.58
Other indictable non-motoring	12.15	16.12	13.82
Indictable motoring	1.62	3.62	6.04

**Table 1.6: Convictions (men and women) by group of indictable offences in all courts in England and Wales in 1998 as percentage of all convictions for respective offence category (Source: Home Office 2000 - Cm 4649, HMSO, London)**

Age Band	10 to 20	21 to 29	60 to 99
Violence against person	33.41	33.42	0.62
Sexual offences	16.60	16.77	9.98
Burglary	49.91	33.99	0.14
Robbery	62.65	24.41	0.05
Theft and handling	34.69	35.76	0.63
Fraud and forgery	17.51	36.42	1.20
Criminal damage	38.33	31.83	0.40
Drugs	22.26	44.11	0.28
Other indictable non-motoring	26.94	41.33	0.67
Indictable motoring	17.77	46.74	1.72



**Table 1.7: Receptions into prison service establishments of men by age and offence in England and Wales 1999 (Home Office 2000 - Cm 4805, HMSO, London)**

	All ages	21 to 24	25 to 29	30 to 39	40 to 49	50 to 59	over 60
All offences	63635	15905	17133	20596	6772	2505	724
Violence against the person	8926	2159	2356	3126	926	293	66
Sexual offences	2414	139	282	777	538	402	276
Burglary	7294	2517	2352	2005	336	71	13
Robbery	1873	667	546	551	90	16	3
Theft and handling	13813	3983	4099	4261	1087	308	75
Fraud and forgery	2449	285	511	888	458	246	61
Drugs offences	5932	1163	1615	2127	730	241	56
Other offences	19842	4774	5100	6516	2442	861	149
No record	1092	218	272	345	165	67	25

**Table 1.8: Proportion of men imprisoned in England and Wales in 1999 for sexual offences as percentage of all offences for respective age group (Home Office 2000 - Cm 4805)**

All ages	21 to 24	25 to 29	30 to 39	40 to 49	50 to 59	60+
3.79	0.87	1.65	3.77	7.94	16.05	38.12



## **Demographic characteristics of elderly offenders**

The only published study of demographic characteristics of elderly offenders has come from a Canadian survey of 44 men in custody in 1996.<sup>6</sup> No differences were found between elderly and younger offenders on the level of educational attainment, in their employment history, current financial debt, and degree of social isolation. Other demographic variables, such as accommodation, socio-economic class, and marital status, were not explored.

## **Psychiatric associations**

Information on psychiatric associations of crime in the elderly comes from research conducted at different stages of the criminal justice system. There are a small number of studies focussing on mental disorders in elderly offenders in police stations, at court, from court liaison referrals, remand prisoners, and in secure hospitals. Lacking are any published investigations of sentenced prisoners. Many of the published studies have had methodological problems. First, the numbers of elderly criminals reported are small – they rarely examine more than 100 individuals, leading to wide confidence intervals in reporting prevalence rates. Second, many do not use standardised psychiatric instruments to investigate psychiatric morbidity, and mostly rely on the clinical judgement of the interviewer. Such evaluations may not be reliable or valid, and do not allow for comparisons with other research. Some reports rely on retrospective case note diagnoses that also have reliability and validity problems. There is only one published study that does use a standardised instrument – one of elderly offenders at an English police station that used the Geriatric Mental State schedule.<sup>8</sup> Third, some of these investigations are from selected populations of elderly offenders who are referred for psychiatric evaluation, leading to high rates of psychiatric morbidity. These reports are of limited use as there is also no reliable way to know how the referral decision is made, and the proportion with psychiatric morbidity that is identified. Nevertheless, the research reviewed below allows for some general conclusions to be made, is hypothesis generating, and highlights areas for future research.

### *Paraphrenia/schizophrenia*

There is little evidence that schizophrenia or related old age psychoses are linked to offending in the elderly. In support, there are a number of studies of the prevalence of psychotic illness in offender populations. Although referred samples of elderly offenders have found rates of schizophrenia as high as 31%,<sup>9</sup> random samples have reported much lower rates. In a study at a police station in England, 2% of a consecutive sample of 50 men over the age of 60 who were being charged with offences had schizophrenia,<sup>8</sup> and another from Israel found 4% in a sample of 28 consecutive attenders at court.<sup>10</sup> Prison research supports the low prevalence of schizophrenia: 2 of the 23 men over 65 in a remand study were schizophrenic.<sup>11</sup> Community studies also provide little evidence for an association between psychosis and offending. Very late-onset schizophrenia-like psychosis (late paraphrenia) occurs predominantly in elderly women who are the least likely group (apart from infants) in the general population to commit crime. In a study of 101 late paraphrenics, none had received convictions for any offences related to their psychotic beliefs.<sup>1</sup>

The only evidence in favour of the hypothesis that psychotic illness is related to offending in later life comes from case reports of deluded men and women committing serious crimes, some of which have been published.<sup>12 13</sup> More epidemiological studies, particularly before the stage that elderly offenders are diverted to hospital, are necessary to resolve this issue.

In summary, there is no consistent evidence that the prevalence of schizophrenia in elderly offenders is higher than an age-matched population in the community.



This may be due to two reasons. First, elderly men and women are rarely illegal drug abusers; and the emerging evidence from large community based epidemiological studies is that psychotic disorders lead to an increased risk of offending particularly when combined with illicit drug abuse.<sup>14</sup> Second, those symptoms in schizophrenia which are correlated with offending, such as delusions or hallucinations that involve perceived threat and override of internal cognitive controls (control/threat-override variety),<sup>15</sup> are less common in those who have suffered from schizophrenia for many years, where the clinical picture will be dominated by negative symptoms.

### *Dementia*

The theoretical ground for suggesting a link between dementia and offending is stronger than for other psychiatric disorders. It is possible to envisage that a condition that causes disinhibition could lead to an excess of offending compared with an age-matched population without dementia. Support for this comes from studies demonstrating high rates of aggressive behaviour in patients with dementia in hospital and non-institutional settings, and the prevalence of people with dementia at the early stages of the criminal justice system. There are a number of studies of violence by hospital inpatients which show high rates of aggression in those with dementia<sup>16</sup> – however, these cases are mostly not of serious violence, and typically involve verbal and unarmed aggression. One study has found that the only predictor of aggression in hospital inpatients with dementia was the presence of delusions.<sup>17</sup> In community settings, where the prevalence of aggression has been found to be 52% in patients with Alzheimer's disease, male gender and the presence of dyspraxia increased the likelihood of assaultative behaviour.<sup>18</sup> Fronto-temporal



dementia has been found to be associated with higher rates of antisocial behaviours compared to patients with Alzheimer's disease.<sup>19</sup>

There are a number of surveys at the early stages of the criminal justice system that have found an increased prevalence of dementia in elderly offenders compared to an age-matched population. Retrospective case note studies of referrals to forensic services have found 19% with dementia in New York (n=52),<sup>9</sup> and 30% in Israel (n=57).<sup>20</sup> In addition, random samples of elderly male offenders have reported 21% with dementia in a consecutive case series of 28 Israeli court attenders.<sup>10</sup> And at a police station, 8% of the 50 men assessed had a diagnosis of dementia.<sup>8</sup> No studies have investigated the prevalence of dementia in prison populations. But it is probable that offenders with dementia are screened at court and diverted away from the criminal justice system. There is some support for this view from secure hospitals where the rate of organic brain syndrome was 33% in a sample of 52 elderly patients, one of the settings to which elderly offenders with overt mental illness would be diverted.<sup>21</sup>

What types of crime are committed by individuals with dementia? There is little research evidence on this and what exists is contradictory. Some reports imply that violent and sexual offences are rare in those with dementia.<sup>7 12</sup> In contrast, Hucker estimated from medical records that 19% of the 43 sexual offenders referred from court for psychiatric assessment had dementia.<sup>22</sup> Other research has found that the elderly who commit homicides are likely to have dementia.<sup>13</sup>

In conclusion, it remains unclear to what extent offending in later life is related to dementia, and what type of crimes those with dementia commit. Larger studies of elderly offenders using standardised diagnostic instruments are needed, particularly before diversion to the hospital system has occurred.

### *Affective disorder*

There are two main findings when reviewing the research on affective disorder in elderly criminals. First, rates of depression are elevated in offenders compared to community elderly persons, irrespective of what stage they are in the criminal justice system. Second, the rates of affective disorders are higher the further an elderly person is along the criminal justice process. At a police station, Needham-Bennett found 12% showed case-level depression,<sup>8</sup> and Barak found that 4% had an affective disorder in a consecutive series of court attenders.<sup>10</sup> In contrast, the rates of psychotic affective illness were 14% in a remanded population in England, although this was based on 23 cases.<sup>11</sup> Age-matched community dwelling elderly men (aged 65-69 years) are estimated to have a prevalence of depression of about 6%.<sup>23</sup> An obvious explanation for the increased prevalence in remand prisoners compared to the community dwellers and those at earlier stages of the criminal system is that the experience of incarceration precipitates depressive illness, a fact borne out in other studies of younger prisoners (see below). Nevertheless, the fact that the rates of depression in offenders are higher at all stages of the criminal system compared to community dwelling elderly persons may suggest a link between offending and depressive illness in old age. Although epidemiological evidence from younger adults has found conflicting evidence that offending is linked to depression,<sup>14 24</sup> it is possible that, in some categories of offending in the elderly, depression may contribute. For example, it has been argued that shoplifting may represent a defence against the grief associated with a loss or feelings of inferiority: an individual's inability to reconcile the loss of a spouse or health, work, or independence may lead to an unconscious acting out to obtain symbolic compensation.<sup>25</sup> It is also possible



that an elderly person who is depressed will not take steps to avoid detection of any crimes committed.

### *Alcohol abuse*

Research examining alcohol-related crime in the elderly is very limited. Some estimates of the prevalence of psychiatric disorders at various levels of the criminal justice system have reported on alcohol abuse, and the findings suggest that rates of alcohol abuse are high. In Taylor and Parrott's investigation of remand prisoners, 33% of those over 65 had a diagnosis of alcoholism – the highest of any age group.<sup>11</sup> However, younger offenders will have high rates of illicit drug abuse, and it is perhaps more relevant to compare the rates of substance abuse (i.e. alcohol and drug) rather than alcohol alone to determine the extent to which age-related factors are involved. High rates of alcohol abuse are also found at other stages of the criminal justice system. A sample of elderly offenders referred to forensic psychiatric services from court found a rate of 21%.<sup>9</sup> Another study found that 50% of violent offenders referred for psychiatric assessment were alcohol dependent.<sup>26</sup> Kratcowski found that in cases of homicide in the elderly, 44% of the offenders and 40% of the victims were under the influence of alcohol.<sup>27</sup> International comparisons are difficult but suggest a different pattern of offending in the US, where the majority of arrests over the age of 55 in the decade 1964-75 were for alcohol-related offences, mainly drunkenness and drink-driving.<sup>28</sup> In the UK, however, there are relatively few convictions for motoring offences (see table 1.7).



## *Personality Disorder*

Although there are methodological and nosological difficulties in diagnosing personality disorder in the elderly, there are some investigations that suggest a link between certain personality disorders and elderly offending. The two categories of personality disorder that have been most closely linked to criminal behaviour appear to be antisocial or dyssocial, and paranoid. The evidence for the former comes from large population-based epidemiological studies,<sup>14 29</sup> and the latter from the finding that paranoid personality disorder is disproportionately represented in prison populations.<sup>30</sup> In elderly offenders, studies have found increased rates of antisocial personality disorder. The Office of National Statistics study in England and Wales of the psychiatric morbidity of prisoners diagnosed antisocial personality disorder in a quarter of the men aged 45-65 (see table 1.9).<sup>30</sup> This study was well designed, randomly selecting prisoners, using a standardised instrument to diagnose personality disorder, and training interviewers in the use of this instrument.

Increased prevalence of antisocial personality disorder is also found at other stages of the criminal justice system. A study of 52 men aged over 59 in English secure psychiatric hospitals found that 10% had antisocial personality disorder,<sup>21</sup> and at an Israeli court, the diagnosis was assigned to 14% of elderly offenders.<sup>10</sup> All of these findings are higher than community estimates: the US Epidemiologic Catchment Area study diagnosed antisocial personality disorder in 0.2-0.8% of a community sample of those aged over 65.<sup>31</sup> In summary, the research in the elderly supports the finding in younger adults that antisocial personality disorder is associated with criminal activity. There appears to be no evidence about other personality disorders.

At the level of personality traits, there is a wealth of literature in younger adults that uses instruments such as the Psychopathy Checklist, the Minnesota Multiphasic Personality Inventory, and the Eysenck Personality Questionnaire. However, there do not appear to be similar studies in the elderly.

**Table 1.9: Prevalence of personality disorder in prisoners aged 45-65**

Male remand (n=67)	Antisocial PD	8%
	Antisocial and other	18%
	Other PD	39%
	No PD	36%
Male sentenced (n=103)	Antisocial PD	8%
	Antisocial and other	15%
	Other PD	30%
	No PD	48%

PD=personality disorder  
Data from the 1998 ONS study of prisoners in the England and Wales.



## Summary

In summary, the elderly constitute only 1% of all convictions, mainly for theft and handling, and sexual offences. However, this proportion is increasing, and is particularly reflected in elderly prisoner numbers that have trebled in the last decade. Sexual offenders are over-represented in the elderly compared to younger offenders, and now comprise half the sentenced prisoners aged 60 and over.

Psychiatric associations remain uncertain. Prevalence studies of psychiatric morbidity in the elderly are scarce and often conflicting. Much of the information is methodologically poor, coming from small samples, some of which are selected.

There are no studies of the prevalence of psychiatric morbidity in the elderly sentenced prison population. Nevertheless, it is possible to hypothesise that rates of dementia, affective illness, and alcoholism would be higher in elderly offenders than elderly community dwelling persons, but that the prevalence of psychotic illness would be similar. No reliable information exists on the rates of personality disorder. Further prevalence studies at all stages of the criminal justice system should further clarify some of the psychiatric associations between crime and the elderly.

## **The physical health of prisoners**

Little is known about the public health burden posed by the “greying” of the prison population. The remainder of this introduction will review the literature on the physical and mental health of prisoners, and provide the background to the study reported in the remainder of this thesis.

The two questions that will be explored in this review of the literature on the physical health of prisoners are: whether prisons pose a health risk, and what types of physical illnesses are present in prisoners. The main focus will be on the health of prisoners whilst serving sentences, but a discussion of what is known about the health of prisoners on reception and after release will be included. This section will conclude with a review of the studies on the physical health of elderly prisoners.

### **Health before prison**

In order to investigate whether prisons are beneficial or deleterious to health, longitudinal studies tracking the health careers of a cohort of individuals from pre-imprisonment to some years after release would be helpful. No such research exists, and there is little information on the health of those committed to prison. As prisoners come from poorer socio-economic backgrounds, one would predict that those entering prison bring with them specific health problems. Most research evidence has investigated rates of substance abuse and dependence on prison entry. For example, in newly remanded prisoners in northern England, Mason found that 33% of men met the DSM-IV drug misuse or dependence criteria, and 32% met the criteria for alcohol misuse or dependence.<sup>32</sup> Intravenous drug use was reported by

26% of men. Maden found that 23% of newly sentenced female prisoners and 11% of sentenced men in England were dependent on drugs.<sup>33</sup> Research has also demonstrated that prison entrants have higher rates of bloodborne viruses secondary to intravenous drug use. An Australian study with voluntary confidential testing of prison entrants found 33% had antibody to hepatitis B, 39% to hepatitis C, and 0.5% to HIV.<sup>34</sup>

## **Health within prison**

### *General health*

There is little information on the general health of prisoners. Three important studies, however, do exist. The first examines the standardised mortality ratios (SMRs) of prisoners - a measure of the mortality rate in comparison with an age-matched general population. The other two investigations are large self-reported surveys of the health of prisoners. The rates of transmissible diseases amongst prisoners, and the extent to which prisons increase these rates are the subject of other studies.

The largest study of the health status of prisoners was conducted in France and showed that the SMR of prisoners was 92 - a non-significant difference with the general population (taken to be 100).<sup>35</sup> However, prisoners had significantly higher SMRs for circulatory diseases (SMR=152) and suicides (SMR=313). Lower SMRs were found for malignant tumours (SMR=54) and deaths by accident, poisoning, and violence (SMR=34). A possible explanation for the similar SMR of prisoners with the general population is that healthier persons are at higher risk of committing crimes (and therefore imprisonment) than persons in poor health, analogous to the “healthy worker effect” observed in occupational studies. The increased level of



cardiovascular deaths does not support this. Explanations for this increased cardiovascular mortality could be the diet of prisoners, increased consumption of tobacco, and lack of exercise whilst in custody. (Suicide will be discussed below). The lower rate for neoplasms is unexplained, and one would expect the opposite - that imprisonment might lead to later diagnosis of cancer and therefore increased mortality. Lower accident rates can be explained by the lack of opportunities for serious accidents in the prison environment. Another finding in this study was that the SMR decreased with increased time spent in prison, and it may be that certain lifestyle factors, such as reduced consumption of alcohol, could explain this.

There is a paucity of data on specific medical conditions. The rate of diabetes is estimated to be similar among prisoners.<sup>36</sup> A Scottish study found relatively high rates of asthma (7.4%), hepatitis (4.1%), and peptic ulcers (3.6%).<sup>37</sup>

The most comprehensive study of prisoner health was conducted in England and Wales by Bridgwood and Malbon and investigated 992 inmates aged 18-49 in 1994.<sup>38</sup> Its main findings are summarised in Tables 1.10 and 1.11, and compared with another study of an age-matched general population using the same questionnaire:

**Table 1.10 Self reported general health of prisoners compared to age-matched general population**

Variable	Prisoners	General population
Very good	20	41
Good	41	43
Fair	32	13
Bad	6	2
Very bad	1	0

Key: results shown as percentages

**Table 1.11 Other health indices in prisoners**

Variable	Prisoners	General population
Long-standing illness or disability	46	29
Acute sickness	19	11
Accident in the last 3 months	16	11
Taking prescribed medicine	30	21
Consulted a doctor in the last 2 weeks	35	11
Average BMI (=body mass index)	24.2	25.6
Systolic blood pressure	114	134

Key: results shown as percentages (apart from BMI and blood pressure)

Another large study in England and Wales has shown that the numbers of physical complaints among prisoners is high.<sup>30</sup> About a third of male prisoners and two fifths of female prisoners reported a long-standing physical complaint. Among men, musculo-skeletal problems were the most common, whilst, amongst women, respiratory problems were reported by 14% of sentenced prisoners. Although it is not clear whether prisoners brought these problems with them, the prison environment, with reduced opportunities for exercise, may not help alleviate them.

Two things stand out in the research on the general health of prisoners. First, prisoners report more physical morbidity than the general population, and, second,

the overall mortality of prisoners does not appear to be different than the general population. These two appear to be conflicting. The fact that prisoners have a lower systolic blood pressure and lower body mass index, as was found in the Bridgwood and Malbon study, does not tally with the increased number of cardiovascular deaths in French prisons; indeed, one would expect a lower blood pressure and body mass index to reduce the risk of cardiovascular disease. It may be that national comparisons are not possible (in particular French socio-economic class differences in cardiovascular mortality may be accentuated than in other countries), or it may be that other aspects of prison life, such as increased consumption of tobacco (also found in the Bridgwood and Malbon study) and reduced alcohol (cardioprotective in moderate consumption), play a more significant role in the cardiovascular disease of prisoners.

### *Transmissible diseases*

High rates of tuberculosis, hepatitis, and HIV are found in prison populations. Each one of these infectious diseases will be discussed, followed by a consideration of the extent to which risk-taking behaviours are prevalent in prisons. Tuberculosis (TB) in prisons has been recently highlighted as a “forgotten plague”. In 1991, outbreaks of multiple-drug resistant tuberculosis (MDR-TB) occurred in New York and Californian prisons. In 1990-91, 171 inmates were diagnosed with TB in the New York State system - an incidence rate of 156/100,000. 32% of the strains tested were MDR.<sup>39</sup> In Europe, high rates of TB have been detected in Barcelona and Madrid (117 per 100,000) prisons. In Siberia and Azerbaijan, the incidence in prisons has been reported to be many orders of magnitude higher than in the general population.<sup>40 41</sup> Prisons act as reservoirs for TB and non-infected individuals may



become infected. Evidence for this comes from one prospective case-control study in the New York City jail system. It found that the number of admissions and the length of time spent in prison were significantly associated with a risk of acquiring TB - a year of jail time increased the odds to 2.2 of contracting the disease.<sup>42</sup>

Most of the research on hepatitis and HIV infection has been done in western countries. In England and Wales, for example, about 8% of prisoners are estimated to be hepatitis B positive.<sup>43</sup> Information on HIV infection rates is more piecemeal. 35 prisoners were recently thought to be HIV positive in England and Wales, but there are clusters of higher infection rates - one Edinburgh prison has a 4.5% HIV positive rate, a Glasgow prison 2.4%.<sup>44</sup> A study of 2000 prisoners in Marseilles estimated seroprevalence of HIV to be 7% in male prisoners and 13% in female prisoners.<sup>45</sup> A more comprehensive study by three American medical associations - the American College of Physicians, the National Commission on Correctional Health Care, and the American Correctional Health Care Association - was published in 1992. It reported that the incidence of AIDS was fourteen times higher in state and federal prisons (202 cases per 100,000) than the general population (15 cases per 100,000), with 6,985 confirmed AIDS cases in prisons at the end of 1990. They estimated that many more were seropositive, and in states conducting blind epidemiological studies, rates of HIV seropositivity ranged from as low as 0.6% (Oregon and Wisconsin) to as high as 17% (New York).<sup>46</sup> Little is known about hepatitis C infection prevalence.

Three studies have found between 16 and 51% of men inject drugs whilst in prison, and between 56-75% reported that they had shared needles whilst in custody.<sup>47-49</sup> Of particular concern is that many prisoners stated that they started to abuse drugs intravenously in prison. A longitudinal study of HIV-positive injecting

drug users found that a third of those that had been in prison had shared injecting equipment whilst in prison.<sup>50</sup> Other high risk behaviours include tattooing and unprotected sexual intercourse. A study in France found that 9% of inmates reported being tattooed during the first three months of imprisonment - and this was higher in those who injected drugs and were HIV positive.<sup>45</sup> A high prevalence of sexual risk behaviours was found among injecting drug users within and between periods of custody in a study in Central London.<sup>51</sup> However, it is not clear whether these prisoners are putting themselves at higher risk than if they were living in the community.

So do prisons endanger health? The evidence from transmissible diseases suggests that they do. Not only are other prisoners at risk, but staff, prisoner's families, and the general public are at risk on their release. TB, hepatitis, and HIV spread in prisons. The prevalence of high risk behaviours, such as needle sharing, are the means by which hepatitis and HIV can infect other prisoners. In the case of TB, overcrowding, poor hygiene, and inadequate diagnosis and treatment contribute to its high prevalence.

### *Illegal drug use*

There are a number of large studies that have reported on the rates of illegal drug use and dependence in general prison populations. 11% of male sentenced prisoners in England and Wales had a diagnosis of drug dependence in one study,<sup>33</sup> and 39% male remand prisoners exhibited harmful or dependent use of substances in another.<sup>52</sup> The Office for National Statistics survey of English and Welsh prisons, using different instruments, found that around 40% of sentenced prisoners, and 50% of remand prisoners were dependent.<sup>30</sup> In Scotland, Davidson et al found 26%



admitted to continuing drug use in prison, and opiate use in 8% of prisoners.<sup>37</sup> A Finnish report found that of those that were drug-free previously, 22% started to use drugs in prison. It also found that 4% were using anabolic steroids in prison.<sup>53</sup> The rates of drug use vary considerably across cultures, and a Nigerian study, for example, found a rate of 3% of cannabis dependence disorder among prisoners and none with alcohol or other drug dependence, and no reported IV drug use.<sup>54</sup>

It is possible to draw three conclusions from this. The first is that rates of drug abuse and/or dependence are significantly higher in prisons than the general population. Second, significant numbers of prisoners start to abuse drugs whilst in custody. Third, rates of drug abuse are higher in remand prisoners. As indicated previously, although high rates of injecting occur in prisons, there is no reliable information on the types of drugs taken in prisons, and their routes of administration.

### **Health after prison**

Two studies have shown that the health problems experienced within prison are continued on release. Harding-Pink found a four-fold increase in sudden deaths in the first year after release from Swiss prisons compared to the age adjusted rate of the general population, most of which were due to opiate poisoning.<sup>55</sup> Seaman found a relative risk of 1.8 from dying of an overdose the year after release.<sup>56</sup> Both studies suggest that the reduced tolerance from opiates for some prisoners whilst in custody puts these individuals at increased risk on release. It may be that the lower purity of drugs in prison also contributes to this risk.

The problem of transmissible infections in prisons extends to release. Not one of the 33 prison injectors in a Scottish prison reported using condoms with their



female sexual partners in the 12 months before imprisonment.<sup>57</sup> In addition to the dangers of further spread of HIV outside prison by sharing needles, there is considerable potential for the infection to be spread in the wider heterosexual population after release.

## **Conclusions**

Limited research evidence exists on the physical health of prisoners. However, it appears that the rates of transmissible diseases, illicit drug use, and cardiovascular mortality are higher in prisoners. Self-reported general health is worse than the general population. Does prison make health worse? Again, the evidence is insufficient to come to a conclusion. The risk of transmissible diseases is increased, but overall mortality rates have been shown to decrease with increasing length of stay in prison. Another finding from this research is that health of prisoners is important to public health as prisons act as potential reservoirs for infectious diseases.

## **Elderly prisoners**

Although elderly prisoners make up less than 2% of the prison population, little is known about the health problems of elderly prisoners and what services they require. This information is important for two reasons. The first is that with the increasing numbers of elderly prisoners, prison and health service managers need this type of information to plan to provide a standard of care equivalent to that available in the community. Prisons may also have to change their physical environment to accommodate increasing numbers of physically disabled persons. The second is that most elderly prisoners will be released back into the community,

and the health problems that they have whilst in prison will simply follow with them into the community. There are a number of conditions where delaying treatment worsens prognosis, and therefore identifying and treating these conditions in prisons is important for public health.

Although studies in younger adults in prison show consistently that they suffer higher rates of infectious disease, cardiovascular disease, and drug abuse, the research on the physical health of elderly prisoners has been inconclusive. One investigation found that the use of medical services declines with age,<sup>61</sup> while another has found increased levels of health care utilisation.<sup>62</sup> A survey of 119 men aged 50 and over in an Iowa prison found high rates of hypertension, arthritis, and previous myocardial infarction.<sup>63</sup> There does not appear to be similar research on elderly prisoners in the U.K. – Bridgwood and Malbon’s study excluded those over 49 years old. Therefore, one of the aims of the study reported in this thesis is an interview and case-note based survey of the health problems of a sample of elderly male sentenced prisoners in England and Wales.

## **The psychiatric morbidity of prisoners**

There have been a large number of surveys of the prevalence of mental disorders in prisoners. They vary in quality considerably, from retrospective case note studies to standardised interviews conducted by trained forensic psychiatrists. Even among the better designed clinical studies, the prevalence of psychotic disorders still varies from 2%<sup>64</sup> to 8%<sup>65</sup>, and clinical depressive disorders from 3%<sup>66</sup> to 17%<sup>30</sup>. The variation is even more significant for personality disorders with some surveys reporting rates less than 10%<sup>64 66</sup> and others over 70%<sup>30</sup>. As this information has not been systematically assessed, a systematic review and meta-analysis of prison studies in Western countries was conducted (see appendix 4 for methodology and references) of which the summary findings are presented below.

### **Psychosis and major depression**

Typically 3.7% of male prisoners and 4.0% of female prisoners have a psychotic illness. Differences between remand and sentenced prisoners do not appear to be significant. 10% of male prisoners and 12% of female prisoners have a major depression. In men, remand prisoners have slightly higher rates of depression than sentenced prisoners (11% vs. 9%). These prevalence rates are 2- to 4-times more common than community based epidemiological surveys of psychosis and depression.<sup>67 68</sup>



## **Personality disorders**

Of those studies that used diagnostic instruments to diagnose personality disorder, 47% of male prisoners were diagnosed with an antisocial personality disorder. This is about ten times the rate of antisocial personality disorder estimated from community samples.<sup>67</sup> Only 4 studies reported on any personality disorder in men, and 65% were diagnosed with any personality disorder. In women, 21% were diagnosed with an antisocial personality disorder, and 42% with any personality disorder.

## **Suicide**

Research on suicides in prisoners has shown that suicide rates have been consistently higher than the general population. In England and Wales, these rates have increased from 74 suicides per 100,000 in 1988 to 126 per 100,000 in 1998.<sup>58</sup> Those serving the first few days of their sentence and those serving life sentences are at highest risk of committing suicide.<sup>59</sup> Recorded psychiatric disorders have been found in 20-50% of those that commit suicide,<sup>59 60</sup> but this is probably an underestimate as the level of hidden psychiatric morbidity in prisoners is high. It is thought that withdrawal from alcohol or drug dependence contributes to the suicide risk of prisoners.

Thus, the burden of treatable serious mental disorders among prisoners is substantial. For example, applying these typical prevalence rates to just the prison population of the USA suggests that a few hundred thousand prisoners may suffer psychotic illnesses and/or major depression — which is twice the number of patients in all American psychiatric hospitals combined.<sup>69</sup>

## **Elderly prisoners**

A literature search did not identify any research on the psychiatric morbidity of sentenced elderly prisoners. Nevertheless, one would hypothesise that the prevalence would be high for three reasons. The first is that studies at other stages of the criminal justice system, as explained above, estimate that rates of mental illness, particularly dementia, are likely to be high in elderly offenders. Of note is Taylor and Parrott's retrospective case note study of remand prisoners that included 23 individuals over the age of 65 and found that 55% had active symptoms of psychiatric disorder.<sup>11</sup> Other studies in elderly forensic populations have found 21% with dementia at court,<sup>10</sup> and 28% with psychiatric illness at police stations.<sup>8</sup> The second reason that prevalence rates are likely to be high is from epidemiological studies of community elderly that estimate 10% have a psychiatric illness, and 5-10% of those over 65 have dementia.<sup>23</sup> The third reason is that studies of younger adult prisoners using standardised semi-structured clinical interviews have demonstrated high rates of psychiatric morbidity.

Determining the rates of major psychiatric disorders is important for the same reasons identified in the physical health section – the number of elderly prisoners is increasing, and information is necessary to plan services. Delaying the treatment of depression and psychosis has been shown to worsen the prognosis of these conditions, and therefore early and accurate identification of major psychiatric conditions is important from a public health perspective. The main aim of the study reported in this thesis is to determine the prevalence of psychiatric disorder in sentenced male prisoners aged 60 and over, and to compare these rates with other studies of younger adults in prison and community surveys of the elderly.



## Sexual Offenders

As 50% of elderly sentenced prisoners are sexual offenders, the opportunity exists to study the psychiatric morbidity of elderly sexual offenders as a separate group. Elderly sexual offenders are an important group to study for three reasons. First, as indicated above, sexual offences are proportionately high in the elderly. Second, there has been no research on elderly sexual offenders that has been based on clinical interviews. Third, it has been hypothesised that there is an increased prevalence of organic brain disorders in elderly sexual offenders, - case note studies have found 13-14% with this diagnosis<sup>22 70</sup> - but this has not been tested in any clinical study. Studying psychiatric characteristics of sexual offenders may also contribute to the discussion about the relationship between sexual offending and mental illness. Although an increasing body of research exists on the relationship between violent crime and mental illness,<sup>14 24</sup> the relationship between sexual offending and mental disorder is less clear. This information may aid in understanding the mechanisms and aetiological factors associated with sexual offending, and may contribute to risk assessment, predicting recidivism, and selecting treatment. Such research may also assist in public policy development. Recently, legislative proposals for the civil commitment of sexual offenders in the US and the UK, particularly of “sexual predators”, have been controversial and concern has been expressed that they have not been supported by scientific evidence.<sup>71</sup>

Preliminary research on the psychiatric characteristics of sexual offenders has been inconclusive, with some studies suggesting high rates of psychiatric morbidity<sup>72 73</sup> and others reporting low rates.<sup>70</sup> This research has been difficult to interpret



because of the use of referred samples and the lack of non-sexual offender comparison groups. Without such comparison groups, psychiatric research on sexual offenders may simply reflect non-specific offender characteristics. Therefore, one of the subsidiary aims of this project is to compare the psychiatric characteristics of elderly men sentenced for sexual offences with elderly men sentenced for non-sexual offences.

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## **Aims**

There were two main aims to this project:

1. To study the prevalence of major mental disorders in male sentenced prisoners aged 60 and over using standardized diagnostic interviews on a representative sample of elderly prisoners in England and Wales.
2. To study the prevalence of physical morbidity in elderly prisoners using self-report and case note derived information.

Subsidiary aims included to estimate the treatment needs of mentally disordered elderly prisoners and to determine to what extent these needs were being met, and to assess the level of physical disability of these prisoners. It was also planned to investigate whether there was any relationship between the index offence and mental illness in the elderly.



## Subjects and methods

### Prisons and prisoners

Men 60 years and older are scattered widely across over 90 institutions in England and Wales. The choice of which prisons to visit was based on four considerations. The first was the number of prisoners that it was necessary to interview. Assuming the proportion with mental illness was 10%, power calculations indicated that 200 men would have to be interviewed for these results to have 95% confidence intervals of plus or minus 4% (using the formula  $N = 1.96^2 * p * (100 - p) / CI^2$  – where p is the estimated proportion with the illness, and CI is intended confidence interval). With an estimated non-consent rate of 10-20% based on previous studies of psychiatric morbidity in prisoners,<sup>1 2</sup> it was aimed to approach 250 men for the study. The next consideration was practical - prisons were selected that were within 100 miles of Oxford and had at least 10 elderly prisoners. The reason for the latter is that it was thought the most time-consuming step would be gaining access to the inmates of a particular prison. Therefore, it was decided to target those prisons with large numbers of elderly men in order to avoid wasting time on negotiating with a large number of individual prisons and travelling to them, some of which would only have 1-2 elderly prisoners. 15 prisons met the criteria of being within 100 miles of Oxford and having 10 or more elderly prisoners. A third consideration was to interview a random sample, and it was decided to interview every elderly inmate in each of the prisons selected. In the final prison, as there were more prisoners than were needed to complete 200 interviews, a random sample was taken by selecting every third prisoner. A fourth and final consideration was whether the elderly men in these 15 prisons were

representative of the total population of elderly inmates. The variables that might influence psychiatric morbidity include the length of time spent in prison, offence category, and the type of prison. Data were requested from the Research and Statistics Directorate of Home Office for all men aged over 59 years in all prisons in England and Wales. Therefore, using these data, information was collated on the length of time spent in prison, offence category, and the type of prison for the elderly men in the 15 selected prisons and compared them to the total number of elderly prisoners in England and Wales. It was found that this sample was representative of all elderly prisoners in terms of these variables (see table 1 in results). In addition, clarification was sought from the Prison Service Health Unit as to whether there were any prisons that acted as specialist mental health treatment centres. They confirmed that this was not the case, and, so, it was unlikely that there would be psychiatric cases selectively pooled in certain prisons.

## **Ethical Approval**

The project was approved by the Prison Health Service Research Ethics Committee.

## **Gaining access**

The following stages were carried out:

### ***1. Advice from other prison researchers***

Advice was sought from the Prison Service Health Unit at the Home Office, Nicola Singleton, senior statistician at the Office for National Statistics, who coordinated the Office for National Statistics study,<sup>3</sup> and Dr Celia Taylor, honorary lecturer at the Institute of Criminology, University of Cambridge, who was a research interviewer



and co-author of the large study of the psychiatric morbidity of remand prisoners,<sup>1</sup> on ways of maximising access to these prisons and to the prisoners within them. They recommended working with the express permission of individual prison governors, using information sheets for prison health care staff and prisoners, and meeting before the interviewing started with prison health staff. In addition, their experience suggested that guaranteeing prisoner anonymity would improve consent rates.

## *2. Prison governors*

Dr Michael Longfield, then head of Health Care for the Prison Service, wrote to the governors of these 15 prisons explaining briefly the nature of the project, its importance, that I would shortly be in contact, and strongly encouraging them to support it. These governors were written to soon after Dr Longfield's letter, explaining the nature of the study in more detail, requesting their permission to conduct it, and asking for the name of a contact person with whom I would liaise directly.

## *3. Individual prisons*

The contact person was then written to, and followed up with a meeting. At the meeting, the contact person (usually one of the health care managers) and I would go through the practical details of interviewing the elderly prisoners and work out a suitable date for the interviewing to commence. 1-2 days before this date, a list was drawn of all eligible sentenced men aged over 59 years and each prisoner was sent an information sheet about the study. Written consent was obtained before the interview either by the contact person or myself. Interviews were conducted between April 1999 and March 2000 in private within the prison (usually in the health care centre but also



occasionally in inmates' cells or other rooms in the prison, such as interview rooms or classrooms).

## **Diagnostic interviews**

### ***1. Demographic data***

Once consent was gained, basic demographic information was gathered from each participant during the initial part of the interview (see Appendix 1). These questions were based on those used in other British studies of psychiatric morbidity of prisoners.<sup>3 4</sup> Social class was calculated using the allocations found in standard British government sources for present occupations or last main occupation.<sup>5</sup>

### ***2. Psychiatric morbidity***

The next stage of the interview was intended to collect diagnostic information. A number of principles guided the selection of the diagnostic instruments used in the study. First, that they were standardised, reliable, and valid. Second, that they were short enough that the whole interview would take no longer than 90 minutes. The reason for this is that most prisons allow inmates out of their cells for a maximum two-hour period. Assuming that prisoners recruited for the study would have to be escorted from their cells to the health care centre, 90 minutes was estimated to be the total time possible for a single interview. Third, the instruments selected should allow for comparisons to be made with other studies of psychiatric morbidity in prisoners and the community elderly.

I was blind to diagnoses recorded in the medical notes and index offence when administering the following instruments.

### ***3. Diagnostic interview for mental illness***

The Geriatric Mental State schedule (GMS) was used. This is a semistructured clinical interview designed to assess the mental state of the elderly in the community, which is widely used in the UK and the rest of Europe. AGECAT, the computerised diagnostic schedule which processes GMS data, reduces unreliability and supports diagnoses of a wide range of disorders. It uses an extensive decision-tree method to aggregate data into scores and allots each subject to levels of diagnostic confidence on each of eight diagnostic syndrome clusters: organic, schizophrenia/paranoid, mania, depression (psychotic and neurotic type), obsessional, hypochondriacal, phobic, and anxiety neurosis. A specified diagnostic level is what would usually be recognised by psychiatrists as a case of mental illness.<sup>6</sup> GMS-AGECAT generated cases of organic disorder and depression correspond well with DSM-III diagnoses of dementia (kappa values 0.80-0.88), and combined major depression, dysthymia, and adjustment disorder (kappa values 0.76-0.80) respectively.<sup>7 8</sup> Data on mood disorders in this study were converted to DSM-IV criteria for major depressive episode by an algorithm designed at the Institute of Human Ageing at the University of Liverpool.

The advantages of the GMS were the good evidence for its validity and reliability, that it has been used in offender populations,<sup>9</sup> and that there are large studies in the UK that have used the GMS in the community which would provide comparative data for this study.<sup>10</sup> In addition, it takes about 30 minutes on average to complete. The only disadvantage of the GMS is that it has not been used or validated in prison populations. Other instruments for diagnosing mental illness were not considered. The GMS represents the gold standard for research into mental illness in elderly persons.<sup>11</sup>

As the GMS had not been validated in prison populations, a diagnosis by clinical examination on 100 consecutive prisoners was made after completing the interviews



but without knowing the final diagnoses of the semi-structured interviews. These were compared with the GMS and DSM-IV generated diagnoses, and intraclass correlations (kappa values) calculated according to standard methods.

I attended a one week training course at the Institute of Human Ageing at the University of Liverpool on the use of the GMS-ACECAT before the project started. This provided opportunities to use it with patients. In Oxford, I piloted the GMS and the other instruments on 5 inpatients on old age psychiatry wards.

#### *4. Diagnostic interview for personality disorders*

##### **Assessment of personality disorders**

Personality traits are “enduring patterns of perceiving, relating to, and thinking about the environment and oneself that are exhibited in a wide range of social and personal contexts.”<sup>12</sup> An individual’s personality develops through the interaction of inborn characteristics (such as emotionality, activity, sociability which are commonly referred to as temperament), and the environment of early and teenage life. If certain temperamental features interact repeatedly with adverse parenting and other environmental factors, personality traits can become sufficiently inflexible and maladaptive that they may cause significant functional impairment and subjective distress. Such patterns of personality organisation constitute personality disorders.

The essential features of a personality disorder are clearly described in the DSM-IV diagnostic criteria. They include: (a) enduring pattern of inner experience and behaviour; (b) pervasiveness across domains of personality functioning and across a range of personal and social situations; (c) inflexibility and maladaptivity; (d) stability and long duration that can be traced back to adolescence or early adulthood; and (e) the enduring pattern is not a consequence of other mental or physical conditions.



These five characteristics provide the guidelines for the comprehensive assessment of personality disorders.

Research literature will often discuss clusters of personality disorder in addition to individual personality disorders. DSM-IV cluster A personality disorders (i.e. paranoid, schizoid, schizotypal) are characterised by social isolation or detachment and suspiciousness, distrust, or discomfort with others. This is labelled the “odd, eccentric” cluster. Cluster B personality disorders (i.e. antisocial, borderline, histrionic, and narcissistic) are characterised by people who appear dramatic, emotional, or erratic. Cluster C includes avoidant, dependent, and obsessive-compulsive personality disorders are characterised by anxious or fearful features.

Interviewing is considered the main method of assessing personality disorders clinically and structured interviews operationalise this process for research purposes. The alternative of self-report methods lead to inaccurately high prevalence rates and frequent false positives, due to the absence of clarification that a clinical interview can provide in addition to the moderating influence of clinical judgement in rating symptoms.<sup>13</sup> Overreporting of personality traits may also be a consequence of the effects of an acute psychiatric disorder on a patient’s self-perception. For example, a depressed person may see themselves as generally more dependent on others, because their mental condition renders them lacking in self-confidence and feeling helpless.<sup>14</sup> However, it is more likely that people tend to overreport because of a less strict interpretation of personality disorder criteria than clinicians – patients may report that they characteristically behave in a certain way when in fact the behaviour is limited to particular situations.

## **Assessment problems**

Individuals with cluster A personality disorders may be difficult to engage in an interview due to their tendency toward social and emotional withdrawal. The interaction may simply be a series of yes and no answers. In contrast, people with cluster B personality disorders may often give lengthy, vivid and exaggerated answers that may cloud their true feelings. Individuals with antisocial personality disorder may deliberately lie or manipulate the interview. Those with cluster C personality disorders, such as avoidant and dependent, may attempt to please the interviewer. Those with obsessive-compulsive personality disorder will try to control the interview, and any attempt by the interviewer to take control may lead to frustration.<sup>14</sup>

An important challenge is being able to distinguish traits from disorders, from a “loud” or strong personality style to a specific personality disorder. The key distinction is that personality disorders are characterised by inflexibility and maladaptation.<sup>14</sup> Someone functioning normally, even though they might have a strong personality, should be able to adjust and adapt their behaviour according to the particular situations that they experience. For example, they would change their approach on realising that what they had said had upset the person in their company. In contrast, an individual with a personality disorder will persist inflexibly regardless of the situation and consequences, and suffer distress and possibly other problems as a result.

A potential problem with diagnosing personality disorders in the elderly is how to determine whether a particular personality style is an enduring pattern. DSM-IV suggests that the onset of a personality disturbance can be traced back at least to adolescence or early adulthood. Therefore, the interviewer needs to explore the onset of traits and behaviours believed to be associated with personality disorder. Although



stability of these patterns is a fundamental feature of personality disorders, there is no precise definition of what constitutes stability. Some diagnostic instruments, such as the SCID-II (see below), have attempted to operationalise this by requiring that the features of the disorder be current (i.e. the patient meets the diagnostic criteria at the time of interview) and that they have been present for the preceding 5 years.

Another potential problem in diagnosing personality disorder is the presence of Axis I conditions. Axis II disorders have been viewed as predispositions or vulnerabilities to Axis I disorders;<sup>15</sup> as pathoplastic influences that affect the expression, course, and prognosis of Axis I disorders; as attenuated forms of Axis I disorders;<sup>16</sup> or as independent of Axis I disorders. In DSM-IV, the general criteria for personality disorder require that the enduring pattern is not better accounted for as a manifestation or consequence of an Axis I disorder, assuming a degree of independence between Axis I and II disorders. Nevertheless, the presence of an Axis I disorder will complicate the diagnosis of a personality disorder. Individuals with personality disorder will frequently seek treatment for a co-morbid disorder. The presence of depression or anxiety may, for example, change the way that an individual feels about themselves and how they behave (e.g. more dependent, more fearful, more socially avoidant). Since most Axis I disorders will involve some impairment in functioning, it may be difficult to understand the normal level of functioning of an individual.<sup>14</sup>

### **Assessment instruments**

Among the currently available instruments is the Structured Clinical Interview for DSM-IV axis II Personality Disorders (SCID-II).<sup>17</sup> This covers each personality disorder category in turn and, within categories, each component is evaluated by a



specified question (or questions) and subsequent probes. It is one of the only personality interviews that has been used in published studies in a range of research centres.<sup>18</sup> This measure has the advantages that it was developed to assess DSM criteria, and that it can usually be completed in under 60 minutes, unlike other instruments that take considerably longer. Another advantage in using an instrument that assessed DSM criteria is that the research literature on offender populations tends to use DSM criteria, and the recent Office for National Statistics study of the psychiatric morbidity of prisoners also used the SCID-II to determine the prevalence of personality disorder.<sup>3</sup> The SCID-II, therefore, would enable comparison with the prevalence of personality disorder in younger prisoners. The SCID-II has also been used in three other prevalence studies of prisoners that were conducted in Australia, Norway and New Zealand.<sup>19-21</sup>

For the purposes of this study, the SCID-II was administered after the GMS. The screening questionnaire was omitted as it leads to a considerable number of false positives.<sup>22</sup> Two categories of personality disorder, depressive and passive-aggressive, which are omitted from the formal version of the DSM-IV, were not assessed.

Other instruments considered were the Personality Assessment Schedule (PAS) and the International Personality Disorder Examination (IPDE). The PAS has the advantage that it has been used in UK psychiatric epidemiology,<sup>23</sup> and can be conducted in around 30 minutes. However, it has not been used or validated in offender populations, and uses ICD-10 diagnostic criteria. The IPDE been used in wide variety of psychiatric settings,<sup>18</sup> including one small study (n<100) of the psychiatric morbidity of female prisoners.<sup>24</sup> Its advantage is that it provides DSM and ICD diagnoses. It also provides for late-onset personality disorders, syndromes present in the last year but not pervasively present in adult life. However, its main

disadvantage for the purposes of this project is that it takes 90 minutes to administer.

As prisoners are only allowed outside prison wings for 120 minutes at a time, it would not be possible to administer the other questionnaires and the IPDE in one sitting.

A further methodological problem can potentially arise in assessing personality disorders in elderly patients with dementia whose self-report about personality traits cannot be relied upon. In such cases, researchers have relied upon information given by informants, such as the individual's spouse or children. Research to date has shown personality disorder diagnoses in those with dementia based on information taken directly from the individual have shown poor agreement with personality disorder diagnoses taken from an informant, even if the same structured interview is used for both sources.<sup>13</sup> Questions such as what is the length of time that an informant needs to know an individual to be reliable, and the relationship of the informant to the individual have not been answered. In the context of this study, it is possible that in prisoners with dementia, the diagnosis of personality disorder will be limited by the lack of informants.

I completed a training video and manual for using the SCID-II before piloting it on 5 elderly psychiatric inpatients in Oxford.

Monthly meetings were held with a steering committee of senior academic psychiatrists (Robin Jacoby and Tony Hope) where diagnostic issues arising from the use of GMS and SCID-II were reviewed.

## ***5. Cognitive tests***

In addition to the cognitive questions in the GMS, two other neuropsychological tests were administered: the Mini-Mental State Examination (MMSE) as a screen for cognitive impairment;<sup>25</sup> and the National Adult Reading Test (NART), a valid and



reliable index of pre-morbid IQ in elderly individuals.<sup>26</sup> The NART estimates IQ on the basis of asking individuals to pronounce fifty words in sequence. The only other measure of IQ that was considered was the Ammons Quick Test,<sup>27</sup> which uses primarily visual material. The Ammons Quick Test has the advantage of not penalising non-native English speakers, and was used in the Office for National Statistics prison survey.<sup>3</sup> However, there is no information on its validity in elderly populations. In contrast, there is evidence for the validity of the NART in the elderly, particularly at levels of cognitive impairment that are not severe and would be expected in elderly prisoners.<sup>28</sup>

## *6. Offence information*

Criminological information was gathered from the local prison database. Information on the nature of the sexual offence was gathered using a semi-structured interview based on that used by Clark et al.<sup>29</sup> (see Appendix 2) No other instruments were found in the published literature on gathering offence information on sex offenders (although there are a number of risk assessment instruments). The advantage of this semi-structured interview was that it has been used on an elderly sex offender population and could be completed in less than 10 minutes.

## *7. Medical notes*

After the interview, each individual's medical records and reception health screen were studied for the presence of major illnesses. Current medication was recorded. All written entries and letters in the records were read to gather this information. Data regarding self-reported health problems were collected using the scheme described in Burvill et al, which enquires about problems in various body systems.<sup>30</sup> (see



Appendix 1) This questionnaire explores the degree of acute and chronic illness.

Acute illnesses are those whose onset has been in the previous 3 months, while chronic illnesses have been present for more than 3 months.

The reason for using the Burvill scale was that it has been validated on an elderly psychiatric population, does not rely upon informant information, and can be completed in about 10 minutes. No other similar general scales to assess physical health in elderly psychiatric patients were found, although there are a number of instruments that measure the Parkinsonian and other side-effects of anti-psychotic medication.<sup>31</sup>

Barthel scores, a standard method to assess the ability to perform activities of daily living independently, were calculated on every individual.<sup>32</sup> 10 activities are enquired about: feeding, mobility from bed to chair, personal hygiene, toileting, walking, climbing and descending stairs, dressing and undressing, bowel continence, bladder continence. A score of 2 is assigned for independence in these activities, giving a maximum score of 20.<sup>33</sup>

Other rating scales for activities of daily living require carer or informant information that was not possible in this study, and are focused on those with dementia. These include the Bristol Activities of Daily Living Scale, the Alzheimer's Disease Functional Assessment and Change Scale, and the Disability Assessment for Dementia.<sup>11</sup> A modified Activities of Daily Living index was also considered but was very similar in content to the Barthel and cited rarely in the literature over the last decade.<sup>34</sup> The advantage with the Barthel is that it is probably the most widely used scale to assess physical disability in clinical practice, and focuses on activities where tangible changes to the environment could meet the disabilities of individual prisoners. The validity, reliability, sensitivity and clinical utility of the Barthel are

excellent, and have been reviewed.<sup>33</sup> The Cardinal Needs Schedule was also considered as it was designed for use with those with chronic psychiatric problems and can be completed within 30 minutes.<sup>35</sup> It is not specifically a measure of daily living, and assesses the wider needs of psychiatric patients, including a measure of the severity of symptoms. However, two of its three sub-sections require informant or carer information.

## **Data handling**

The data for the GMS were automatically converted into diagnoses by the computerised AGECAAT programme.<sup>6</sup> A computerised version of the SCID-II was used, and the final number of personality traits for each personality disorder was recorded. Personality disorders were diagnosed when an individual reached a pre-designated threshold number of positive traits. Diagnostic information, along with the demographic and criminological data, on each prisoner were then entered into the Statistics Package for the Social Sciences (SPSS) for analysis. Descriptive statistics were calculated. Because of the skewed distribution of data, medians were used for comparing time spent in prison. Population means were compared on parametric measurements using independent t-tests, on non-parametric data using the Mann-Whitney test, and on categorical variables using chi-squared tests.

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# Results

## The sample

233 men were approached, of whom 203 were interviewed, representing 19.2% of the sentenced population of men aged 60 and over. The 30 men (14.8%) who refused to consent did not differ significantly from those who gave consent with regard to age (65.6 [SD 4.8] vs. 65.5 [SD 4.8]) or past psychiatric history (40% vs. 48%) but had been in prison longer (median length=59 months vs. 16 months,  $z=3.40$ ,  $p<0.001$ ). The mean age of the subjects interviewed was 65.5 (range 60-88, median 65.0, SD 4.8) compared to a mean age of 64.9 (SD 4.8) for the total population of sentenced men aged 60 and over. 28 men interviewed were aged 70 and over, and 4 were in their 80s. The characteristics of the sampled population were not significantly different from those of the total population of sentenced men aged 60 and over in prison (table 3.1, p values not shown).

Demographic details of these prisoners are outlined in table 3.2. Men interviewed were most likely to be separated or divorced, employed at the time of their offence, and living in rented accommodation. Most did not have any qualifications and the commonest socioeconomic class grouping was skilled non-manual.

**Table 3.1** Comparison of sample to total population of sentenced men aged 60 and over in prison

Variable	Total male prisoners aged 60 and over		Sample of 203 prisoners aged 60 and over	
	No.	%	No.	%
<b>Time served</b>				
Short (0-47 mnths)	717	72.4	148	72.9
Medium (48-119 mnths)	132	13.3	22	10.8
Long (>120 mnths)	142	14.3	33	16.3
<b>Type of prison</b>				
Local	381	36.5	76	37.4
Training	485	46.5	103	50.7
Open	84	8.1	11	5.4
Dispersal	93	8.9	13	6.4
<b>Current Offence</b>				
Sexual	483	48.8	101	49.8
Violence	214	21.6	50	24.6
Drugs	109	11.0	29	14.3
Fraud	32	3.2	5	2.5
Robbery and burglary	31	3.1	4	2.0
Theft	30	3.0	7	3.4
Other	59	6.0	7	3.4
Not recorded	32	3.2	0	0
<b>Ethnic Origin</b>				
Non-white	104	10.1	24	11.8

Note: Denominator for first column is 1043 apart from length of sentence and current offence where information is available on 991 prisoners.

**Table 3.2** Demographic information on male prisoners aged 60 and over

Variable	No. elderly prisoners (%)	% of younger adult prisoners*
<b>Marital status:</b>		
Divorced/separated	86 (42)	9
Married	63 (31)	15
Single	31 (15)	34
Widowed	23 (11)	0
<b>Occupation at time of offence:</b>		
Employed	82 (40)	44
Unemployed	29 (14)	28
Retired	61 (30)	NA
On long-term sickness benefit	29 (14)	7
<b>Socio-economic class:</b>		
1 (professional and managerial)	11 (5)	
2 (intermediate)	23 (11)	
3.1 (skilled manual)	12 (6)	
3.2 (skilled non-manual)	91 (45)	
4 (semi-skilled)	39 (19)	
5 (unskilled)	26 (13)	
Unknown	1 (0)	
<b>Educational attainment:</b>		
No qualifications	134 (66)	46
CSE, O level or equivalent	11 (5)	37
Vocational	37 (18)	15
A level or above	19 (9)	
Unknown	2 (1)	
<b>Accommodation:</b>		
Privately owned	66 (33)	15
Rented	129 (64)	48
Hostel/temporary	3 (1)	4
Other	4 (2)	
Unknown	1 (0)	

\* Data from the 1121 sentenced men in the 1998 ONS study (ages 18-65).<sup>1</sup>



## **Psychiatric morbidity**

108 men (53% [95% CI, 46-60%]) had a psychiatric diagnosis (mental illness and/or personality disorder). Cases of mental illness using the GMS-AGECAT were diagnosed in 64 men (32% [25-38%]) (table 3.3). The most common diagnosis was that of depressive disorder which was found in 60 individuals (30% [23-36%]). Of these, 24 (40%) had a past or present history of depression noted in their medical records. Psychotic illness was present in 10 men (5%), of which 9 were depressive psychoses. One man was diagnosed with hypochondriacal disorder. The two men diagnosed with dementia had the onset of their illness whilst in prison.

Personality disorder was diagnosed in 61 men (30% [95% CI, 24-36%]) (table 3.4). The most common personality disorders were antisocial, obsessive-compulsive, and avoidant (8% each). 7% of the sample had more than one personality disorder. No men were diagnosed with dependent, borderline, hysterical, narcissistic, or schizotypal personality disorder. There was co-morbidity of personality disorder and GMS-AGECAT cases of psychiatric illness in 19 individuals (9%).

Prisoners were interviewed about their 1-month history of substance abuse using the questions in the GMS. Overall 10 prisoners (5%) had current substance abuse/dependence: 6 had alcohol abuse or dependence, 4 drug abuse or dependence. A lifetime history of alcohol abuse was documented in the medical records of 23 prisoners (11%), and co-morbid drug abuse in 1 case.

There was one documented case of learning disability (of moderate severity). There was co-morbidity of substance abuse/dependence with personality disorder or psychiatric illness in 8 cases.

Risk factors for depressive illness were explored. The risk of being diagnosed with depression at interview was increased if there was a past history of psychiatric illness and poor self-reported general health. There was no increased risk if the present conviction was for a sexual offence or for murder. Being currently widowed, divorced or separated, having paid employment at the time of the offence, having a co-morbid personality disorder, age at interview, or the length of time spent in prison did not increase the risk of being diagnosed with a depressive illness (table 3.5).

## **GMS Validity**

Diagnoses of depression on 100 consecutive elderly prisoners made by clinical examination are compared with GMS and DSM-IV generated diagnoses in tables 3.6 and 3.7. The kappa value between a diagnosis made by clinical examination and a GMS case level of depression was 0.84 (high level of agreement). Five of the prisoners interviewed that achieved a case level of depression on the GMS were not thought to be depressed on clinical examination but were nevertheless given other diagnoses on clinical examination. Three were thought to be mildly depressed, and the other 2 anxious on clinical examination. In contrast, the kappa value between a diagnosis made on clinical examination and DSM-IV generated diagnosis was 0.34 (poor level of agreement). An alternative way to examine the GMS and DSM-IV

diagnoses is to use sensitivity and specificity. The GMS shows excellent sensitivity (95%) and specificity (94%). The DSM-IV generated diagnosis is specific (99%) but not sensitive (27%) – that is, it results in a high proportion of false negatives, but very few false positives.



**Table 3.3** One month prevalence of psychiatric morbidity in 203 male prisoners aged 60 and over

Diagnoses	No. (%) of prisoners
Psychoses:	
Depressive	9 (4)
Other	1 (1)
Total	10 (5)
Neuroses:	
Depressive	51 (25)
Hypochondriasis	1 (1)
Total	52 (26)
Organic disorders:	
Dementia	2 (1)
DSM-IV major depressive episode	15 (7)
DSM-IV personality disorder:	
Antisocial personality disorder	17 (8)
Any personality disorder	61 (30)
Current substance abuse/dependence	10 (5)
TOTAL*	108 (53)

\*Total is less than the sum of individual disorders because some prisoners had more than 1 disorder.

**Table 3.4** Prevalence of SCID-II personality disorders in elderly prisoners

Personality disorder	No. (%) of prisoners
Mixed	14 (7)
Cluster A:	
Paranoid	7 (3)
Schizoid	13 (6)
Cluster B:	
Antisocial	17 (8)
Cluster C:	
Obsessive-compulsive	16 (8)
Avoidant	17 (8)
Not otherwise specified	5 (2)
TOTAL*	61 (30)

\*Total is less than the sum of individual disorders because some prisoners had more than 1 personality disorder.

**Table 3.5** Relative risk for GMS depression in elderly prisoners

Variable	Relative risk	95% CI
Bad or very bad self-reported general health	2.2	1.2-4.3
Past psychiatric history	2.1	1.1-3.8
Current diagnosis of personality disorder	1.0	0.5-2.0
Conviction for murder	1.2	0.6-2.6
Conviction for sex offence	1.0	0.5-1.8
Paid employment at time of offence	0.7	0.4-1.4
Widowed/separated/ Divorced	0.9	0.5-1.7
Age at interview:		
60-70	1.3	0.5-3.0
70-80	1.0	0.4-2.4
80+	1.0	0.9-1.0
Time in prison:		
Less than 12 months	0.7	0.4-1.3
12 months – 48 months	1.0	0.5-1.9
48+ months – 120 months	0.5	0.2-1.6
120+months	0.9	0.4-2.1



**Table 3.6** Comparison between number of prisoners diagnosed with depression on clinical examination and number reaching GMS case level for depression

	Depressed on clinical examination	Not depressed on clinical examination	Totals
GMS depressed	21	5	26
Not GMS depressed	1	73	74
Totals	22	78	100

**Table 3.7** Comparison between number of prisoners diagnosed with depression on clinical examination and number DSM-IV diagnosed

	Depressed on clinical examination	Not depressed on clinical examination	Totals
DSM-IV depressed	6	1	7
Not DSM-IV depressed	16	77	93
Totals	22	78	100

## Physical health

Prisoners rated their general health and 36% reported it to be good or very good (table 3.8). However, 83% of elderly prisoners described a long-standing illness or disability. The level of acute sickness (onset within the last 3 months) was 19%.

Major illnesses recorded in the notes and self-reported chronic illnesses are summarized in table 3.9. The findings in tables 3.8 and 3.9 are compared to previous studies of two other comparable groups: one of 992 male sentenced general prisoners interviewed in 1994 in England and Wales aged 18-49 who were studied for self-reported physical morbidity and use of health care services,<sup>2</sup> and another of 895 community dwelling elderly men in England aged 65-74 assessed as part of the Department of Health's 1996 "Health Survey" who were studied for a variety of self-reported health measures.<sup>3</sup>

The most common major systems affected with illness that were recorded in the medical records were psychiatric, cardiovascular, musculoskeletal, and respiratory. There were three systems where there were significant discrepancies between the presence of self-reported chronic illness and that recorded in the medical notes. The discrepancy between a past or present history of psychiatric illness recorded in the prison medical notes and that reported on interview was highly significant ( $z=8.28$ ,  $p<0.001$ ). The difference between musculoskeletal problems complained of at interview and reported in prison medical records was also significant ( $z=3.94$ ,  $p<0.001$ ), as was self-reported hearing or eyesight problems compared to these problems noted in medical records ( $z=2.96$ ,  $p<0.01$ ).

The most common diagnoses recorded in the medical notes were angina or ischaemic heart disease in 40 individuals (20%), osteoarthritis in 27 (13%), hypertension in 27 (13%), diabetes in 17 (8%), COAD in 14 (7%), and asthma in 11 (5%). On self-report, 68 (34%) reported a past head injury with loss of consciousness, 11 (4%) reported a past history of intra-cranial bleed, 7 (3%) said they had a diagnosis of epilepsy, and 3 (1%) had a history of meningitis. 156 (77%) men were currently on any prescribed medication.

93 individuals (46%) did not smoke. Current smokers consumed an average of 15.5 (SD 10.3) cigarettes per day. Information was not gathered on the quantity of alcohol consumed prior to prison entry.



**Table 3.8** Self-reported general health: elderly prisoners compared with other studies of younger prisoners and the community elderly

	Elderly prisoners	Male prisoners aged 18-49*	Community elderly men aged 65-74**
	%	%	%
Very good	11	20	25
Good	25	41	37
Fair	36	32	28
Bad	17	2	8
Very bad	11	1	2
Taking prescribed medication	77	30	68
Long-standing illness or disability	83	46	65
Acute sickness	19	19	18

\* Survey of the physical health of prisoners 1994.<sup>2</sup>  
\*\* Health Survey for England 1996.<sup>3</sup>

**Table 3.9** Major illnesses recorded in the medical notes and self-reported chronic illnesses of the prisoners interviewed compared to other studies of younger prisoners and the general population.

System	Major illnesses recorded in medical records	Self-reported chronic illnesses	Self-reported chronic illnesses	
	No. elderly prisoners (%)	No. elderly prisoners (%)	% prisoners aged 18-49*	% community elderly aged 65-74**
Psychiatric	92 (45)	18 (9)	NA	1
Cardiovascular	71 (35)	72 (36)	3	29
Musculoskeletal	48 (24)	88 (43)	16	25
Respiratory	31 (15)	43 (21)	15	12
Genitourinary	26 (13)	34 (17)	1	4
Endocrine	21 (10)	18 (9)	2	9
Gastrointestinal	21 (10)	32 (16)	5	8
CNS	18 (9)	20 (10)	5	4
Dermatological	12 (6)	16 (8)	3	2
Hearing/eyesight	12 (6)	30 (15)	4	NA
Haematological	6 (3)	2 (1)	0	1
Other	13 (6)	14 (7)	0	4
No illness	31 (15)	34 (17)	NA	NA

\* Survey of the physical health of prisoners 1994.<sup>2</sup>  
 \*\* Health Survey for England 1996.<sup>3</sup>

## Medication

Information on the type of medication was collected and compared with acute and chronic illnesses recorded in the medical notes (table 3.10). Two analyses are presented. The first is the proportion of elderly prisoners that was prescribed medication for a particular bodily system (table 3.11). It shows that the most commonly prescribed types of medication were for the cardiovascular (36%), musculoskeletal (28%), and the gastrointestinal (21%) systems. 8% of elderly prisoners were prescribed psychiatric medication. The second table examines the appropriateness of the prescription by comparing the type of medication with the illnesses recorded in the medical records (table 3.12). 85% of elderly prisoners with cardiovascular disease recorded in their notes were prescribed appropriate medication. Similarly, 78% with endocrine and 65% with recorded musculoskeletal problems were prescribed medication for those systems. In contrast, only 20% of those who had a depressive illness recorded in their medical notes were receiving anti-depressants, and 18% with any psychiatric illness (excluding substance abuse and personality disorder) were receiving any psychotropic medication. Of those with GMS depression, only 14% were being treated with anti-depressants at the time of interview.



**Table 3.10** Medication prescribed for elderly prisoners (numbers of prisoners are presented in the tables)

**Cardiovascular system**

	No medication	Medication
No illness	120	10
Illness	11	62
Total	131	72

**Respiratory system**

	No medication	Medication
No illness	166	9
Illness	11	17
Total	177	28

**Musculoskeletal system**

	No medication	Medication
No illness	130	25
Illness	11	17
Total	177	28

**Neurological system**

	No medication	Medication
No illness	188	1
Illness	8	6
Total	196	7

**Endocrine system**

	No medication	Medication
No illness	180	5
Illness	4	14
Total	184	19

**Gastrointestinal system**

	No medication	Medication
No illness	150	27
Illness	11	15
Total	161	42

**Dermatological system**

	No medication	Medication
No illness	187	4
Illness	6	6
Total	193	10

**Genitourinary system**

	No medication	Medication
No illness	179	0
Illness	17	7
Total	196	7

**Other illnesses**

	No medication	Medication
No illness	172	7
Illness	13	11
Total	185	18

**Psychiatric illnesses (excl. drugs and alcohol, and personality disorder)**

	No medication	Medication
No illness	135	7
Illness	50	11
Total	187	18

**Depression**

	No medication	Medication
No illness	156	1
Illness	37	9
Total	193	10

**GMS depression**

	No medication	Medication
No illness	136	3
Illness	51	8
Total	193	11

**Table 3.11** Type of medication prescribed

<b>Cardiovascular</b>	<b>36%</b>
<b>Musculoskeletal</b>	<b>28%</b>
<b>Gastrointestinal</b>	<b>21%</b>
<b>Respiratory</b>	<b>13%</b>
<b>Endocrine</b>	<b>9%</b>
<b>Other</b>	<b>9%</b>
<b>Psychiatric</b>	<b>8%</b>
<b>Dermatological</b>	<b>5%</b>
<b>Anti-depressives</b>	<b>5%</b>
<b>Neurological</b>	<b>3%</b>
<b>Anti-psychotics</b>	<b>1% (n=3)</b>
<b>Benzodiazepines</b>	<b>1% (n=3)</b>

**Table 3.12** Appropriateness of prescription by system

<b>Cardiovascular</b>	<b>85%</b>
<b>Endocrine</b>	<b>78%</b>
<b>Musculoskeletal</b>	<b>65%</b>
<b>Respiratory</b>	<b>61%</b>
<b>Gastrointestinal</b>	<b>58%</b>
<b>Dermatological</b>	<b>50%</b>
<b>Other</b>	<b>46%</b>
<b>Neurological</b>	<b>43%</b>
<b>Anti-depressives</b>	<b>20%</b>
<b>Psychiatric</b>	<b>18%</b>
<b>Anti-depressives for GMS depression</b>	<b>14%</b>



**Functional disability**

The degree of functional disability was measured using the Barthel index (table 3.13). 19 men (9%) had Barthel scores of less than 20 indicating that they were not independent in activities associated with daily living. Most of these individuals with lower Barthel scores were unable to climb stairs. The six prisoners with scores of 18 or less had additional disabilities, such as the inability to wash themselves independently.

**Table 3.13** Barthel scores for 203 prisoners aged 60 and over

Barthel score (out of 20)	No. elderly prisoners (%)
16	1
17	2
18	3
19	13 (6)
20	184 (91)

**Sex offenders**

Of the 203 men interviewed, 101 were sex offenders. The mean age of the sex offenders was 65.9 (SD 4.7, range 60-88), similar to the other offenders whose mean age was 65.1 (4.9, 60-83). The median time spent in prison was not significantly different for those who had committed sex offences (15 months) compared with those who did not commit sex offences (22 months;  $z=-1.40$ ,  $p=0.16$ ). Compared with non-sex offenders, sex offenders were more likely to be white ( $p=0.03$ ,  $\chi^2_3=9.3$ ), unemployed at the time of their offence ( $p=0.04$ ,  $\chi^2_2=6.3$ ), have worked most recently as a car or truck driver ( $p=0.0003$ ,  $\chi^2_1=13.4$ ) and have a past psychiatric history recorded in their medical notes ( $p=0.03$ ,  $\chi^2_1=4.8$ ). The age of conviction for the index offence of sex offenders was significantly older ( $p<0.001$ ,  $t=3.84$ ,  $df=201$ ). The length of time between offence and conviction was not known. The marital status of the two groups was similar. Other demographic information is presented in table 3.14.

**Table 3.14** Demographic information on elderly sex offenders and elderly non-sex offenders

Variable	No. sex offenders	No. other prisoners
Age band:		
60-69	82	89
70-79	17	11
80+	2	2
Time served:		
Short (0-47 mnths)	84	64
Medium (48-119 mnths)	9	13
Long (>120 mnths)	8	25
Ethnic origin:		
Non-white	5	19*
Marital status at time of offence:		
Married	15	17
Divorced/Separated	42	48
Widowed	7	6
Single	31	28
Unknown	9	0
Professional status:		
Professional & Managerial	3	8
Intermediate	8	15
Skilled manual	57	46
Semi-skilled manual	18	21
Unskilled	15	11
Unknown	1	0
Employed at time of offence	33	68*
Last employment as car or truck driver	23	5**
Past psychiatric history	42	56*
Age at conviction	62.7 (SD 7.3)	57.9 (SD 10.4)**
Total	101	102

\*p<0.05; \*\*p<0.001



### *Offences and victims*

The offences of the sex offenders were rape and attempted rape (41 cases), indecent assault and gross indecency (n=38), buggery (n=17), incest (n=2), and other (n=3).

The offences of the other prisoners were for violent crimes (n=50), drug-related (n=29), theft (n=7), fraud (n=5), robbery (n=4) and other (n=7). Select offence and victim characteristics of the sex offenders in this sample are presented in table 3.15.

Most of the sex offenders were the father, stepfather, grandfather, or an acquaintance of their victim; and two-thirds had committed crimes on several women. Offences were usually committed in the offender's home.

A past history of childhood sexual abuse was disclosed by 29 (33%) of the elderly sex offenders (no sexual abuse in 59, unknown 13). Self-reported early losses (such as being taken into care, or being separated by main carers) were described in 22 individuals (no early losses in 61, unknown 18). No comparative data were available on non-sex offenders.

**Table 3.15** Offence characteristics of elderly sex offenders

Variable		Elderly sex offenders	
		No.	% known cases
Relationship to victim	Father/grandfather	32	34
	Stepfather	12	13
	Relative	4	4
	Acquaintance	38	40
	Stranger	9	9
	Unknown	6	
Sex of victims	Male only	22	23
	Female only	62	65
	Both sexes	12	13
	Unknown	5	
Age of victims at start of offence	Less than 11	44	47
	11 or over	49	53
	Unknown	8	
Number of victims	1	36	38
	2-4	47	49
	More than 4	13	14
	Unknown	5	
Length of time offending (current offences)	<1 year	40	47
	1-5 years	25	29
	5-10 years	5	6
	10+ years	15	17
	Unknown	16	
Place of offences	Own home	70	81
	Victim's home	6	7
	Other	9	10
	Unknown	16	
Type of offence (unknown=3)	Penetrative	45	46
	Non-penetrative	53	54
Coperpetrator (unknown =9)	Involved in offence	6	7
	Not involved	86	93
Recent stressors (at time of offence)	Present	42	49
	Not present	44	51
	Unknown	15	

### *Psychiatric characteristics of sex offenders*

Psychiatric diagnoses are presented in table 3.16. No significant differences exist between sex offenders and other offenders for diagnoses of psychotic illness, major depressive episode, organic disorder (dementia), and personality disorder. None of the elderly prisoners was diagnosed with dependent, schizotypal, histrionic, narcissistic, or borderline personality disorders.

Personality disorder differences were further explored by comparing traits (table 3.17). The largest differences were found in the presence of more schizoid and obsessive-compulsive traits in sex offenders. Smaller differences were found in sex offenders possessing more avoidant and fewer antisocial traits.

The mean MMSE score of the sex offenders was 28.0 (SD 2.3) that was similar to those of the non-sex offenders (MMSE=27.9, SD 2.6). However, there was a significant difference in the NART estimated IQ of the two groups: the mean NART score of the sex offenders was lower at 95.5 (SD 14.2; median 95) compared to non-sex offenders which was 100.8 (SD 13.8, median 101) [ $t=2.63$ ,  $df=190$ ,  $p=0.009$ ].



**Table 3.16** Psychiatric diagnoses of elderly sex offenders and elderly non-sex offenders

Diagnoses	No. sex offenders	No. other offenders
Psychoses	6	4
Dementia	1	1
GMS case of depression	29	31
DSM-IV major depressive episode	7	8
DSM-IV personality disorder:		
Antisocial	5	12
Avoidant	11	6
Obsessive-compulsive	10	6
Schizoid	10	3
Paranoid	4	3
Not otherwise specified	1	4
Any personality disorder	33	28
Current substance abuse/dependence	1	9
TOTAL	101	102

Note: there are no significant differences in these diagnoses between sex offenders and other offenders.

**Table 3.17** Personality traits of elderly sex offenders and elderly non-sex offenders

Variable	Mean score for sex offender (SD)	Mean score for non-sex offender (SD)	P value	T value (df=201)
Avoidant traits	2.0 (3.2)	1.1 (2.8)	<0.05	2.13
Schizoid traits	2.9 (2.9)	1.2 (1.9)	<0.0001	5.06
Paranoid traits	0.9 (2.0)	1.2 (2.3)	NS	1.02
Obsessive-compulsive traits	3.1 (3.1)	2.1 (2.7)	0.02	2.42
Antisocial traits	2.1 (2.1)	2.8 (2.9)	<0.05	2.08

### *Physical characteristics of sex offenders*

The number of sex offenders with genito-urinary disorders (recorded in their medical records or self-reported on interview) was 26 (26%) compared with 12 (12%) in the non-sex offenders. This was a significant difference ( $\chi^2_1=6.52$ ,  $p=0.01$ ).

### *Types of sex offenders*

We compared those convicted of penetrative acts - rape and buggery (58 individuals) - with those convicted of indecent assault and gross indecency (38 individuals). There were no differences in the rates of psychiatric illness between these two groups apart from being assigned a diagnosis of personality disorder. 25 (43%) of those convicted of rape and buggery were diagnosed with a personality disorder compared with 6 (16%) who were convicted of indecent assault and gross indecency ( $\chi^2_1=7.83$ ,  $p=0.05$ ). There were no differences in personality traits that reached significance. However, those convicted of rape and buggery had lower MMSE (27.8, SD 1.6) and NART-estimated IQ scores (92.5, SD 13.2) than those convicted of indecent assault and gross indecency (MMSE=28.6, SD 1.5,  $t=2.5$ ,  $df=93$ ,  $p=0.02$ ; NART=99.7, SD 15.0,  $t=2.4$ ,  $df=90$ ,  $p=0.02$ ).



## **Psychiatric morbidity of murderers**

37 murderers were interviewed (18% of the sample). 12 of these elderly murderers were GMS depressed, and 12 were assigned a personality disorder diagnosis (see table 3.18). There were no significant differences between the proportion of murderers that were depressed or personality disordered compared with the non-murderers ( $\chi^2_1=0.25$ ,  $p=0.62$  for depressed prisoners;  $\chi^2_1=0.12$ ,  $p=0.73$  for those with personality disorder). However, there were 7 murderers with a diagnosis of antisocial personality disorder which was significantly more than those diagnosed with antisocial personality disorder in the non-murderers ( $\chi^2_1=6.6$ ,  $p=0.01$ ).

In addition, the 51 prisoners that were convicted of non-sexual violent offences were investigated. There were no significant differences in the prevalence of GMS depression, personality disorder, or antisocial personality disorder in those convicted of violent offences compared with those who were convicted of non-violent offences ( $\chi^2_1=0.0$   $p=0.91$  for depressed prisoners;  $\chi^2_1=0.01$ ,  $p=0.91$  for those with personality disorder;  $\chi^2_1=2.54$ ,  $p=0.11$  for those with antisocial personality disorder).

**Table 3.18** Psychiatric diagnoses of elderly murderers and elderly non-murderers

Diagnoses	No. (%) murderers	No. (%) other offenders
Psychoses	2 (5)	8 (5)
Dementia	1 (3)	1 (1)
GMS case of depression	12 (32)	47 (28)
DSM-IV personality disorder:		
Antisocial	7 (19)	10 (6)*
Any personality disorder	12 (32)	49 (30)
TOTAL	37 (18)	166 (82)

\* significant difference (p=0.01)

## References

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# Discussion

## The sample

The sample was representative of all elderly sentenced men in prison, even though the non-consenters had spent significantly more time in prison. Non-consent rates in this study (15%) were similar to the three largest surveys of psychiatric morbidity in English and Welsh prisons. 18% of sentenced prisoners did not consent in the 1998 Office for National Statistics (ONS) study,<sup>1</sup> and 18% did not consent in the 1995 study of remand prisoners.<sup>2</sup> Gunn's 1991 study of sentenced prisoners had a lower non-consent rate of 8%.<sup>3</sup> In this study of elderly prisoners, nearly half the non-consenters came from an open prison (where the non-consent rate was 63%), and were employed outside the prison during the day when the interviews were being carried out.

## Methodological issues

Although the instruments that were used in this study have been shown to be reliable and valid tools for assessing mental disorders, and therefore allow valuable comparisons to be made, some have argued that they have limitations.<sup>4</sup> This view questions whether diagnostic instruments are able to take into account the particular circumstances of the prison environment, where the boundaries between an understandable sadness and having a treatable depressive disorder may be blurred. The systematic review and meta-analysis of psychiatric surveys of prisoners included in the appendix provides some support for this – in studies where *psychiatrists* undertook the interviews, the reported rate of depression was lower. However, this systematic review did not support the view that *diagnostic instruments* over-estimated rates of mental illness – in depressive disorders, there was no difference, and in psychotic illnesses, those studies that used diagnostic

instruments reported a lower prevalence. In the context of this project, it could be argued that the prevalence reported is an under-estimate, as psychiatric illness in the elderly is ideally diagnosed using an informant in addition to a clinical interview. However, the findings from this project indicate that GMS cases of depression correspond very well with those made on clinical examination. The kappa value for the correlation between the two methods on 100 consecutive prisoners was above 0.8 (where any figure above 0.6 is considered a high level of agreement), and the specificity and sensitivity rates of the GMS were above 90%. In relation to the accuracy of personality disorder diagnoses, there is no study that has shown such diagnoses based on informant information are more valid than those based on patient interview alone.<sup>5</sup>

However, the GMS has its limitations. Although it has been used in offender populations,<sup>6</sup> the GMS has not been administered previously in prison settings. The GMS does not give lifetime diagnoses of substance dependence or abuse, or formally test for learning disability. It is likely that rates of alcohol abuse in this investigation, in particular, are underestimates, reflecting the non-availability of alcohol in prison. A similar problem exists with the other main diagnostic instrument used in this study, the SCID-II. It has never been validated in elderly persons, although it has been widely used to diagnose personality disorder in prisoners.<sup>1</sup>

## **Demographic information**

In comparison with younger prisoners from the ONS study (average age 25-29), there were similar rates of employment at the time of the offence (40% in elderly prisoners, 44% in the ONS study). However, elderly prisoners were more likely to have no qualifications (66% *vs.* 46%), and live in rented accommodation prior to detention in custody (64% *vs.* 48%).<sup>1</sup> Elderly prisoners were more likely to be on long-term sickness



benefit (14%), but less likely to be unemployed. Although elderly prisoners were more likely to have no qualifications, a higher proportion had attained an A-level, higher degree or received vocational training (28%). More elderly prisoners owned their own homes (33%). These differences probably reflect age-related cohort effects.

In comparison with community dwelling elderly persons, elderly prisoners were different in relation to marital status. In a 1997 survey of UK males aged 65 and over, 71% were married (in contrast to 31% in this sample), and 4% were divorced (compared to 42% in this study).<sup>7</sup> The increased divorced rate in elderly prisoners may be a consequence of imprisonment, and may also be a risk factor for offending. The ONS study did examine whether younger adult prisoners were divorced, but it found that 18% of sentenced male inmates were living alone.

The 1991 census provides information on other demographic variables, such as employment, social class, and educational attainment. The main difference appears to be in relation to social class - elderly prisoners were more often in social class 4 and 5 (32%) compared with elderly persons in the community (13%). 11% of those aged 65 and over, and 59% of those aged 55-64 years were employed in the community compared with 40% in this sample (average age 65). However, the proportion with no educational or vocational qualifications was similar – 57% in the general elderly population and 66% in elderly prisoners.<sup>8</sup>

One of the interesting demographic findings in this study is that the rate of homelessness in prisoners prior to custody was negligible. This contrasts to Taylor and Parrott's investigation of elderly remand prisoners that found a third were homeless.<sup>9</sup> This difference may reflect the fact that remand prisoners may be detained for more trivial crimes, such as drunk and disorderly, which are probably more common in the homeless,



and that the latter study was based in London. Homeless persons are also more likely to be remanded in custody than bailed.

In summary, the main demographic findings are that 40% of elderly prisoners were working at the time of their offence. More elderly prisoners were divorced and single at the time of their offence than community elderly persons. This is probably associated with a lifestyle that puts them at risk of committing crimes.

## **Psychiatric morbidity**

The main findings of this thesis were that 32% (95% CI, 26-38%) of sentenced elderly prisoners had a diagnosis of psychiatric illness using GMS-AGECAT, and 30% (24-36%) had a diagnosis of personality disorder using the SCID-II. In total, 53% (46-60%) of the sample had a psychiatric diagnosis. Therefore, one in three elderly prisoners have a potentially treatable mental illness. This is a higher level of treatable psychiatric morbidity than in surveys of adult prisoners that typically find that one in seven prisoners have a potentially treatable mental illness.<sup>10</sup> The implications of this for the prison medical service will be discussed below.

The rate of depression reported in this project (30% [23-36%]) was higher than previous studies of younger adult prisoners and community studies of the elderly in the UK. A sub-analysis of 103 men aged 45-65 in a larger study of prisoners found 6% had a depressive illness,<sup>1</sup> and another investigation of 95 sentenced male prisoners aged 50-72 diagnosed 10.5% with a major depressive episode.<sup>11</sup> A community study of 468 men aged 65-69 using the GMS found 6% had a depressive illness (4.6% with depressive neurosis, and 1.7% with depressive psychosis).<sup>12</sup>

Using DSM-IV criteria, 7.4% were diagnosed with a depressive episode in this study. This compares with research on the prevalence of major depression in the community using DSM criteria that finds rates between 0.4% and 3.7%.<sup>13</sup>

How do GMS and DSM based criteria of depression compare? The difference in prevalence rates between the two methods is over four-fold in this study. This study provides evidence to support the use of GMS-generated rather than DSM-based diagnoses in elderly prisoners. Other studies have supported the view that the GMS, which has been validated using psychiatrists' judgements of what constitutes a case of depression for intervention, is more clinically useful. In support are the findings from this project comparing a diagnosis made on clinical examination with those made using the GMS. Those diagnosed with depression on clinical examination corresponded very well with GMS cases of depression ( $\kappa=0.84$ ), and the GMS demonstrated sensitivity and specificity rates above 90%. In contrast, the DSM generated diagnoses correlated poorly with those made on clinical examination ( $\kappa=0.34$ ) and exhibited poor specificity (27%). DSM major depression, being a more exclusive diagnosis, is nevertheless valuable for types of research requiring unambiguous examples of illness.<sup>14</sup>

**Aetiology of depression**

So why are so many elderly male prisoners depressed? One model to explore risk factors for depression is to consider three aspects: predisposing, precipitating, and maintaining factors.<sup>15</sup> For elderly prisoners, these can be illustrated in the following table:

*Predisposing factors*

Biological	Social	Psychological
Genetic predisposition Past psychiatric history Structural brain changes Co-morbid medical conditions	Childhood emotional deprivation and abuse Childhood institutional care Work or marital difficulties Lack of confiding personal relationships Unemployment More likely to commit crime and/or be detected	Low self-esteem Learned helplessness Personality disordered

*Precipitating factors*

Biological	Social	Psychological
Recent physical illness Alcohol or substance misuse Certain medication	Recent life events, especially: conviction, redundancy, unemployment, family problems, marital difficulties, sudden homelessness/loss of home, bereavement. Imprisonment Bullying and intimidation by other prisoners	Helplessness in the face of precipitating factors Disablement

*Maintaining factors*

Biological	Social	Psychological
Chronic illness or disability Sensory impairment Lack of adequate treatment for physical and psychiatric problems Certain medication	Chronic social stressors (family, housing, financial) Lack of intimate confiding relationship Lack of visitors Bullying and intimidation by other prisoners Continuing incarceration	Low self-esteem Feelings of remorse and guilt over the index offence No opportunities in prison to address psychological issues Disablement



These factors are likely to interact in elderly men in the prison setting. Some of them will be present in any prisoner, regardless of age, and some will be specific to older incarcerated persons. For example, elderly men may be particularly vulnerable in a setting where there are few, if any, men of similar age, and where the antisocial behaviour of other inmates may be particularly upsetting. No information exists on the levels of bullying or other forms of abuse in prisons by age, but this information would be useful to clarify these issues.

### *Predisposing factors*

The high prevalence of physical illness in elderly prisoners is likely to predispose them to depression. Many community studies have shown a close association between the onset of depression and physical illness, and it is thought that the physical illness may provoke a depressive disorder.<sup>16</sup> As a consequence this may further increase the degree of disability associated with the original physical illness. Of the conditions that are particularly associated with depression, cerebrovascular disease may be the most important in elderly prisoners as other studies of elderly person with cerebrovascular disease have demonstrated neurobiological changes that provide reasonable mechanisms for depression. Recent evidence has suggested that the societal disadvantage imposed by physical illness is a key risk factor for depression for older people in institutions.<sup>17</sup> The environment of a male prison where such differences would be accentuated may be relevant in explaining why the rates of depression are so high in elderly prisoners. Residential and nursing homes are estimated to have a similarly high prevalence of depression.<sup>18</sup> In these settings, some the variation in rates of depression can be explained by the disadvantage caused by the deprivation of benefits that might be available to others

where more care, aids and adaptations are provided. In prisons, depriving elderly inmates of benefits that might be available to younger ones may be particularly difficult.

The side effects of certain medications prescribed to elderly prisoners may be relevant to the aetiology of depression. Notable is the high rate of cardiovascular medication. These include beta-blockers and alpha-adrenergic blockers that can cause depression as a side effect.

Although it was found in this study that a longer length of imprisonment did not increase the risk of being diagnosed with a depression, the environment is likely to have a significant effect on the mood of prisoners. Psychologically, the prison setting could re-enact memories of childhood institutional care, bullying by authority figures, and feelings of helplessness and isolation.

Another possible explanation is that elderly persons committing crimes are disproportionately depressed. Although the evidence for depression being a risk factor for criminal behaviour is conflicting in general population cohorts,<sup>19 20</sup> such risk factors may nevertheless interact in different ways in the elderly. As these population surveys are overwhelmingly based on criminality in personality disordered and drug abusing young men, it is difficult to extrapolate their findings to the elderly. Studies of elderly offenders at other stages of the criminal justice system have found an increased prevalence of depression (as reviewed in the introduction), and this provides support for the possibility that depressed men are at higher risk of being convicted (including not taking measures to evade detection).

Other important contributions to the aetiology of depression in elderly prisoners include the lack of social supports and intimacy. Research has shown that the lack of a confidant is at least as important as severe life events in the aetiology of depression. Murphy suggests that a confidant may act as a buffer against the social losses associated



with depression.<sup>21</sup> The relevance of these factors in elderly prisoners is likely. One of the consequences of imprisonment is the breakdown of social networks. Also, as most prisons do not have many elderly inmates, elderly prisoners would not have the opportunity to make friendships with peers of a similar age in most prisons.

### *Precipitating factors*

The work of Brown and Harris on the role of life events in precipitating depression has been replicated in the elderly. Murphy found that 48% of 119 depressed elderly had experienced at least one severe life events in the preceding year, compared with 23% of a control group.<sup>21</sup> The events were threatening and often involved loss, such as the death of someone close, major financial problems, and the sudden forced removal from one's home. Of particular note was the role of poor physical health in the form of a serious illness of recent onset or a chronic disabling sickness. In addition, major social difficulties lasting for 2 years or more were also associated with depression. In a prison setting, there are major stressful life events during reception into custody and during a sentence, such as the removal from one's home, the breakdown of relationships, and the loss of prestige and reputation among one's peers and family.

### *Maintaining factors*

An important finding from this study is unmet treatment needs for prisoners with depression. Only 14% of those with GMS depression were being treated with anti-depressives at the time of interview. The prison service does not offer psychotherapy for treatment of mental illness, and it is therefore these depressed prisoners were not receiving other recognised forms of treatment for their illness. In addition, many prisoners



were not receiving adequate treatment for physical illnesses. For example, only 58% were receiving treatment for a gastrointestinal problem recorded in their notes.

## **Risk factors for depression**

The relative risk for depression was calculated to explore the quantitative contribution of some of these factors. In this sample, depression was increased in prisoners with a past psychiatric history (relative risk 2.1), and those with poor self-reported physical health (relative risk 2.2). The ONS survey of younger adult prisoners found that the risk for neurotic disorders was increased in those who were economically inactive at the time of their offence and in those who had spent less time in prison.<sup>1</sup> In contrast, this study demonstrated no relationship between paid employment and the length of time spent in prison with depression in elderly prisoners. Surveys of younger prisoners have not explored the association between physical illness and depression. However, a large investigation of GMS elderly depressed individuals in the community found that physical illness at the time of interview was predictive of depression (as was being widowed, divorced, or separated).<sup>22</sup>

## **Service implications**

5% of the elderly prison population represents a large number of psychotic inmates, consistent with the 4% found in the systematic review of all published prison surveys in adults. If the sample in this study is extrapolated to the total elderly prison population, then the 5% with psychosis represents 52 (95% CI, 21-83) elderly sentenced men who would be psychotic at any one time in prisons in England and Wales, almost all with a

depressive psychosis. Most psychiatrists would wish to see these individuals moved to a specialist treatment centre.

Similarly, around 274 (95% CI, 243-380) elderly inmates will be suffering from a major depression in English and Welsh prisons. Most of these individuals can be treated within the prison setting. In the sample interviewed, only 14% of the depressed prisoners were being treated with anti-depressants, demonstrating significant unmet treatment needs. However, three-quarters of the sample were being prescribed medication, and elderly prisoners were therefore in regular contact with prison doctors for their physical health needs. These contacts should provide ample opportunity for assessment and treatment of psychiatric illness within the prison setting.

The most concerning aspect of this study is the large numbers of untreated and under-treated depressed elderly men in custody. Such men may not come to the attention of prison medical staff as they sit quietly in their cells, not causing any problems for prison officers or posing a security risk. In many ways, the depressed elderly prisoner is an “ideal” prisoner. I will list a number of possible improvements in the prison service that may assist in improving the mental health of elderly prisoners.

The prison service can respond by making improvements in the identification of depression in the elderly. This could include increased general awareness among all prison staff of the increased risk of depression of the elderly prisoner. Prison officers should be encouraged to refer those elderly prisoners who appear withdrawn, isolated, and depressed to the prison medical staff. Among prison medical staff, a similar increased awareness, and the further commissioning of prison health services to the National Health Service should improve the situation.<sup>23</sup> A screening questionnaire for depression at prison reception for those aged 59 and above may be helpful. The 15-item version of the Geriatric Depression Scale would be well suited to the prison environment as it is simple



to administer, designed for community samples, and only takes a few minutes to complete.<sup>24</sup> Prisoners could be identified at reception, by referral from prison officers, or when seen for physical problems, and referred to a prison medical officer or visiting psychiatrist. Those prisoners with chronic physical problems and a past psychiatric history are at particular risk of depression. In addition, training and recruitment of prison medical staff remain important challenges,<sup>25</sup> and seminars on the special needs of elderly prisoners could be considered for prison health care managers and senior medical officers.

Such educational interventions, though, are not sufficient. The Hampshire Depression Project, a randomised control trial of an educational intervention for the detection and treatment of depression in the primary care in the UK, did not find that an educational programme based on clinical practice guidelines improved the recognition or outcome of depression in a community setting.<sup>26</sup> In contrast, the Seattle group found that a “multi-faceted” intervention in primary care that involved increased intensity and frequency of outpatient follow-up by both primary care physicians and consulting psychiatrists was effective in treating those with major depression.<sup>27</sup> The evidence, therefore, suggests that prison psychiatrists should collaborate with prison medical officers to target and treat depression effectively in custody.

In the longer term, there may a need to consider specialised prisons for the elderly. In such establishments, mutual support among peers is more likely, and the prison regime can be modified to suit elderly persons. Inmates will not be at risk of being bullied or exploited by younger ones. The high levels of physical morbidity in the elderly indicate that structural changes to certain prisons are necessary, particularly in those whose mobility is impaired.

Another area of consideration is sentencing policy for the elderly. Much debate has been generated over the policies of successive UK governments, and the ineffectiveness



of incarcerating persons who pose little risk to the public. Although much of this debate has focused on young offenders with illicit drug-related offences, elderly offenders should also be increasingly considered as candidates for community punishments.

## **Elderly prisoners and the National Health Service**

It is important to review a number of recent governmental initiatives in relation to the findings of this project. The National Service Frameworks (NSF) for mental health, and for older people set specific service standards and dominate the current approach of health providers to systematically develop the National Health Service. The NHS plan for 2002/2003 is a related document setting short-term goals for mental health and older people. Finally, performance indicators provide a summary of how the NHS is responding to some of these initiatives.

Standard One of the NSF, mental health promotion, states that health and social services should promote mental health for all, combating discrimination, and promoting social inclusion. In relation to prisoners, whether social services should have a role is unclear. Probation Officers are involved in some aspects of the social welfare of prisoners, but have a different skill set and focus than would a social worker working in a community mental health team. The main problem with relying only on probation officers is that they are involved towards the end of a prisoner's sentence. However, it could be argued that the mental health of prisoners, especially elderly ones, could be promoted by social work intervention throughout the sentencing process. Family issues will be prominent in elderly prisoners, particularly in the half that are sex offenders, and social workers could make valuable contributions in addressing any such problems.

Standard Two, primary care, states that those who have access to primary care should have their mental health needs identified and assessed. This process can be improved by

implementing some of the guidelines developed by Seattle group. This standard also states that referral to specialist services should be available for all those that access primary care services. The process of visiting prison psychiatrists should continue in prisons in England and Wales so that this standard continues to be addressed.

Standard Three, access to services, discusses the use of NHS Direct. Such use will be necessarily limited in prisons where phones are only provided in general places.

Standard Four, effective services for people with severe mental illness, states that all mental health service users should be on the Care Programme Approach (CPA). This should make significant contribution to improving the care of prisoners. In particular, it can provide continuity between the care of inmates whilst in custody and on release into the community. Discharge planning meetings, an integral part of the CPA, could be instituted for prisoners who have had specialist involvement, and would increase the likelihood that such prisoners will be followed up by community mental health teams. The CPA has not yet been instituted in prisons.

Standard Five, also on effective services for people with severe mental illness, states that all patients should have timely access to an appropriate hospital bed. The government initiative to increase the number of medium and low secure beds should improve the current situation where hospital transfers from prison are often delayed.

Standard Six, caring about carers, and, particularly, Standard Seven, preventing suicide, are important for elderly prisoners. The rate of suicide in prisoners over 60 years was found to be 90 per 100 000, from 1988-95.<sup>28</sup> This is more than double the general population rate of suicide for adults over 60 in the general population according to the 1991 census. There is an explicit statement in Standard Seven about prisoners, and it states that local prison staff should be supported in preventing suicides in prisoners.



The NSF for older people complements the standards for mental health. Standard One, rooting out age discrimination, and Standard Seven, mental health, may be relevant. The former outlines an important principle for prison health services that treat inmates of all ages. The latter states that older people should have access to integrated mental health services, and effective diagnosis and treatment.

The NHS plan for 2002/2003 has a few specific objectives that can potentially improve care to elderly prisoners. One of them is that all people with a serious mental illness should be able to have access to a Crisis Resolution Team by 2004. No discussion about the implementation of this within prisons is currently available. It would be unrealistic to expect community teams to cover prisons due to the security issues raised by non-prison staff accessing the prison out of hours, although it is likely that the lack of resources will be the main problem. An alternative is for prisons to set up their own teams, made up of members of health care staff that may already be on call for the hospital wing. The significant resource implications in constituting such teams may be partly met by another of the Plan's objectives: to increase the number of mental health staff in English and Welsh prisons by 300.

Performance indicators (PIs) have not been published on prison health services, but this would be useful. In February, the Department of Health reported some examples for mental health services including suicide rates, the level of benzodiazepine prescribing in primary care (not a significant problem in elderly prisoners – only 1% were being prescribed benzodiazepines), and length of stay in hospital, appointment waiting times, and the number of delayed discharges. A mechanism exists for introducing PIs into the prison system through Her Majesty's Inspectorate of Prisons, an independent body since 1979 that includes a medical inspector. The Inspectorate aims to visit every prison once in



five years, and its work comprises a programme of announced inspections lasting a week or longer, shorter unannounced inspections, and thematic reports on various issues.

### **Elderly prisoners and Her Majesty's Prison Service**

The medical inspector of Her Majesty's Inspectorate of Prisons reported on prison mental health care in 2000. The following themes from the Inspectorate's report could be relevant to improving the services provided for elderly prisoners:

1. **Staffing.** Increasing the number of prison medical officers and nurses with training in psychiatry would be a welcome development. The lack of multidisciplinary care of prisoners is a significant concern, and the Inspectorate found that clinical psychology and occupational therapy were available in only two of the thirteen prisons inspected.
2. **Daytime activity.** The standard of offering activities that allow for prisoners to be outside their cells for at least 12 hours a day is an important one.
3. **Use of seclusion.** The Inspectorate criticised the lack of information about the use of seclusion by prisons, and this information needs to be monitored.
4. **Referral and transfer to the National Health Service.** The Inspectorate found an average wait of 11 months for transfer to a secure hospital bed. This clearly needs significant reduction. The Inspectorate criticised the parallel development of services in the National Health Service and the Prison Medical Service, and suggested that a strategy of improving the latter would be wasteful as it would be staff intensive and involve duplication. An alternative would be to transfer prisoners requiring specialist psychiatric care to a hospital under a temporary licence, as is currently done for physical illness. The present situation means that individuals can only be transferred under Sections 47 or 48 of the Mental Health Act (1983), and those that do not fulfil

the criteria for the Act remain as inpatients in prison hospital wings. The Inspectorate estimated that this would reduce the number of inpatient beds in prisons by a third, but require a corresponding increase in medium security (over 500 beds).

My view is that this suggestion by the Inspectorate would be a helpful temporary measure, but the long-term goal should remain that prison medical services are taken over by the NHS. If this were to happen, all the separate systems that need to be put into place for meeting the challenges discussed above would be integrated into various arrangements being made in the NHS for service development and quality.

## **Personality disorder**

The notion of personality disorders in the elderly is controversial. Although a basic assumption is that they are enduring conditions across the life course,<sup>29</sup> the evidence in support is contradictory. For example, a meta-analysis of prevalence of personality disorder found that it did not significantly differ in young people compared with those aged over 50.<sup>30</sup> In contrast, a recent community-based study found a decline with increasing age of those with a DSM-III diagnosis of personality disorder.<sup>31</sup> Longitudinal studies of personality disorder have shed little light, as they have involved small numbers, with follow-up rates of about a third, and have focused on antisocial behaviours.<sup>32</sup> There is, however, evidence to suggest that there are age-related changes to specific personality disorder categories. It is thought that the cluster B, or “dramatic-erratic”, personality disorders such as antisocial and borderline decline in prevalence with age, while obsessive-compulsive and dependent personality disorders do not.<sup>33</sup> To date cross-sectional studies of all categories of personality disorder have been underpowered due to the low base of personality disorders in the populations studied.<sup>30 34</sup>



This project adds to the growing body of evidence that elderly individuals do suffer from personality disorders: 30% in this sample had a personality disorder. Although cross-sectional in nature, this investigation also supports the notion that the cluster B personality disorders decline in frequency with age. SCID-II has also been used to diagnose personality disorders in another study of sentenced men in England and Wales. 64% of sentenced men aged 18-65 were found to be personality disordered and 23% had an antisocial personality disorder (ASPD) in the age group 45-65<sup>1</sup> which compares to 30% (with any personality disorder) and 8% (with antisocial personality disorder) in this study. The lower rate of antisocial personality disorder found in this investigation compared to other studies of adult prisoners may represent a process of maturity or “burn-out” in older ASPD individuals. Other factors that may contribute to this difference include attrition through a higher risk of suicide, homicide, and accidental death in ASPD individuals.<sup>35</sup> No prisoners were found with any of the other cluster B personality disorders (borderline, narcissistic, and histrionic).

Little is known about personality disorders in old age community settings, but one meta-analysis in the over 50s found community rates of around 10% with personality disorder.<sup>30</sup> The Epidemiologic Catchment Area study included 2106 community elderly, and 0.2-0.8% were diagnosed with antisocial personality disorder.<sup>36</sup> The prevalence of personality disorder in this sample, therefore, lies between community rates of personality disorder in the elderly and the prevalence in younger prisoners.

Eight per cent of elderly prisoners were found to have an obsessive-compulsive personality disorder. Obsessive-compulsive personality disorder is usually considered to be a “high functioning” disorder of personality and not therefore a risk factor for offending behaviour. Nevertheless, in the case of serious offenders, obsessive-compulsive personality disorder can be relevant to sexual offending in a small subgroup of



individuals. Similarly, schizoid personality disorder has been observed in serious offenders against women and children, motivated by fantasies that are often unknown to others in the individual's social environment.<sup>37</sup>

The implications for the large number of personality disordered elderly men in prison are not clear. Important questions that need addressing include: Are they more disruptive in prison? Are they more vulnerable to bullying and abuse in prison? Are they more likely to recidivate on release from prison? If it is found that they are more likely to recidivate, then treatment programmes can be instituted, although there have been no trials so far for the treatment of personality disorder in the elderly.<sup>33</sup>

Nine per cent of prisoners in this study had co-morbid depression and personality disorder. This is less than could have been expected as the presence of depression is likely to alter the way that someone feels about himself and how they relate to others – by being, for example, more socially avoidant, more dependent and more fearful. Ideally the interviewer should investigate personality functioning prior to or between episodes of Axis I disorders, and have the opportunity to take a more longitudinal view that is provided in a one-off assessment. It has been proposed that mood disorders are more common among individuals with cluster B personality disorders, which are characterised in part by affective symptoms. This view sees personality disorders and mood disorders as part of a spectrum of psychopathology.<sup>38</sup> Research in other settings has shown that personality disordered elderly are more prone to develop depression.<sup>39</sup> In contrast, this study did not find personality disorder to be a risk factor for depression, and supports the view that Axis I and II disorders can be viewed independently. Nevertheless, it is possible that elderly prisoners with subclinical anxiety and depression are likely to be personality disordered than other inmates.

## **Dementia**

Community rates of GMS dementia in men aged 65-69 are 1.3-1.4%,<sup>40</sup> similar to the low rate of dementia in this study (1%). This is considerably lower than studies of elderly offenders at other stages of the criminal justice system. There may be three main reasons for this. Those arrested who show signs of dementia are successfully diverted to hospital and residential care before sentencing. This suggestion has not been investigated, but other research indicates that the current system at courts in the UK is not successful at identifying psychiatric disorders such as depression and schizophrenia.<sup>41</sup> It may be that those with dementia who commit crimes are not prosecuted or are cautioned. Another possible reason for the low rate of dementia in prison is that prisoners are a selected population, in that those with dementia do not have the capacity to commit crimes serious enough to warrant incarceration.

## **Ethical issues**

The presence of individuals with psychotic illness, major depression and dementia in prison raises important issues over the appropriateness of their continuing custody.

Legally, provision is made under the Mental Health Act 1983 (Sections 47 and 48 in England and Wales) for the transfer from custody of individuals with mental illness to secure hospitals for assessment and treatment. Ethically, it can be argued that the continuing custody of inmates with a deteriorating psychotic illness or a severe dementia be compared with the incarceration of those with severe chronic physical illness. Is it appropriate to keep someone with a severe progressive cancer in prison? What purpose does it serve? The introduction of the Human Rights Act 1998 (adopted from the European Convention on Human Rights), which came into full force in the UK on 2 October 2000, may assist in the clarification of how justifications for punishment may



change in accordance with the deteriorating health of a prisoner. Article 3 forbids inhuman or degrading treatment or punishment of those in detention. The Act also stipulates a new statutory duty for all public authorities to act compatibly with human rights (Section 6).<sup>42</sup> The lack of appropriate health care for sick prisoners has been declared as a form of inhuman or degrading treatment in the case of a prisoner who developed a severe depression during an unusually long and stressful remand period, and a violation of the Convention was confirmed by the European Court.<sup>43</sup> On two other occasions, governments have had to demonstrate that high levels of medical care were available for chronically sick prisoners in order to counter charges under Article 3 of the Convention.<sup>43</sup> In many ways, then, the groundwork has been laid for a test case in the UK involving someone detained in custody with severe serious mental illness, whose treatment is under equivalent standards in the community. As a ruling has been made in favour of prisoners with chronic physical illness, it would seem unlikely that a substantially different approach would be taken to those experiencing similar difficulties as a result of a severe dementia or psychotic depression. Further discussion of the ethical implications of the continuing detention of prisoners with dementia is found in the paper in appendix 3.

## **Physical illness**

Two main conclusions can be drawn from the findings of the physical morbidity of elderly prisoners. First, there are high rates of morbidity in various measures of general health including major illnesses recorded in the medical notes, and chronic illnesses reported at interview. Second, there appear to be significant differences between the health problems of this sample and those of younger prisoners and community elderly reported in other studies. These general conclusions – elevated baseline morbidity which



is higher than comparative groups - are similar to the findings reported in the previous section on psychiatric morbidity.

A limitation of this part of the study is that prisoners' health was assessed exclusively by self-report and reviewing the medical notes. Including a physical examination might have resulted in higher morbidity rates as prison medical records have been shown to underdetect the morbidity of prisoners.<sup>44</sup>

The majority of illnesses reported by elderly prisoners were psychiatric or affecting the cardiovascular, musculoskeletal, and respiratory systems. There are similarities between these findings and those in surveys conducted in North American prisons. A survey of 119 men aged 50 and over in an Iowa prison found that the main illnesses reported were musculoskeletal (arthritis) and cardiovascular (hypertension and previous myocardial infarction).<sup>45</sup> A notable difference is that 22% of the Iowa sample had a venereal disease compared to only 2 cases (1%) in this sample. Another survey of 48 Canadian older (over 44 years old) inmates found high rates of self-reported musculoskeletal, and circulatory disorders, but also 58% with visual or hearing disorders – higher than the 15% reported in this sample.<sup>46</sup>

One of the implications of these findings is that the health care planning of elderly prisoners cannot be made on estimates of physical morbidity in younger inmates or community elderly persons. The only group with comparable rates of physical morbidity are elderly psychiatric patients with depressive illness. This is based on an investigation, where almost all the participants were inpatients, that found 80% reported chronic illness (vs. 83% in this study) using the same instrument.<sup>47</sup> The prevalence of problems in the musculoskeletal (37%), cardiovascular (40%), and respiratory illnesses (13%) in that study were comparable to this one. In addition, this project found that about 10% prisoners aged 60 and over were functionally disabled in the activities of daily living.

With projected increases in the population of elderly inmates, prison authorities may have to consider the modification of their physical environments to accommodate these needs.

There were differences between the rates of psychiatric and musculoskeletal illness recorded in the medical notes and those reported on interview. One explanation of this finding is that older men may minimise their psychiatric symptoms, but the two methods of estimating psychiatric morbidity are not strictly comparable. Medical records note serious illnesses in the past, such as deliberate self-harm or alcohol abuse, which prisoners are unlikely to report as chronic psychiatric illnesses. In contrast, the rate of musculoskeletal illness was higher on self-report than in the medical notes. It may be that some prisoners somatise mental disorders such as depression and anxiety in terms of musculoskeletal illness (non-specific “aches and pains”).

The rate of smoking of the prisoners interviewed in this study (54%) is less than that found in younger prisoners where 80% were currently smoking.<sup>48</sup> Nevertheless, it is higher than the community elderly where 19% are estimated to be smokers. Smoking contributes to cardiovascular and respiratory disease, both found to be high in this sample, and smoking cessation programmes may therefore make an important contribution to improving the health of prisoners.

This study found high levels of prescribing for medication for cardiovascular, musculoskeletal, and gastrointestinal diseases. Over a fifth of prisoners were prescribed at least one medication for each of these systems. By comparing medication prescribed with diagnoses recorded in the medical notes, it was possible to examine the appropriateness of these prescriptions. It was found that most 85% of those with a cardiovascular problem recorded in their notes were being prescribed with appropriate medication. This is in marked contrast to psychiatric morbidity - only 18% with psychiatric problems were being medicated.



In conclusion, these results suggest that the physical health of elderly prisoners is significantly worse than that of elderly men in the community. As there have been no longitudinal studies of prisoners' health, the reasons for the increased morbidity in this population are not clear; lower socioeconomic class backgrounds (who are at increased risk of poor health) may be relevant. In addition, as studies of younger prisoners have found high rates of risky behaviours such as smoking, drug and alcohol use, and poor diet,<sup>148</sup> one would expect that as these younger prisoners grow old, there would be increased prevalence of diseases of the cardiovascular, respiratory, and other systems. As mentioned earlier, poor health care provision in some prisons may contribute to these problems. A series of inspections in English and Welsh prisons has found that this is the case, and the level of general healthcare is not yet equivalent to that in the community.<sup>49</sup>



## **Sex offenders**

As far as I am aware, this is the first psychiatric study of sex offenders (of any age group), that uses a non-sex offender comparison group. The three main findings were: first, sex offenders had high rates of psychiatric morbidity: 6% had a psychotic illness, 29% a GMS case of depression, and 33% a DSM-IV personality disorder; second, there were low rates of organic disorder – 1% had a clinical diagnosis of dementia; and, third, elderly sex offenders did not have different psychiatric or personality disorder diagnoses than elderly non-sex offenders. However, at the level of personality traits, there were significant differences. Sex offenders had more schizoid traits in their personality (core features of which are social detachment and restricted emotionality), and trends were found that suggest that they had more obsessive-compulsive and avoidant traits, and fewer antisocial ones.

On tests of cognitive function, sex offenders had significantly lower estimated IQ scores compared with non-sex offenders confirming a non-significant trend reported in a smaller study in 51 sexually aggressive men.<sup>50</sup> However, the estimated IQ score of the sex offenders in this study was within the normal range. Mini-mental state examination scores were similar in the two groups. The finding that sex offenders had fewer substance abuse disorders should be interpreted cautiously as small numbers were involved, and the diagnosis of substance abuse disorders is complicated by a number of factors in the prison environment.

A limitation is that this study combined all the different types of sex offender. An attempt was made to test the hypothesis that there are important differences between these categories by comparing the psychiatric characteristics of those who were convicted of penetrative and more serious acts (rape and buggery) with those convicted of indecent assault and gross indecency. It was found that those convicted of rape and buggery were

more likely to be diagnosed with a personality disorder, and had lower estimated IQ and mini-mental state examination scores. The finding that those convicted of rape and buggery were more likely to be diagnosed as personality disordered concurs with a review which concluded that rapists were more likely to be personality disordered than child molesters.<sup>51</sup> A second limitation is that the non-sex offenders may not be the ideal comparison group. Some of them may have committed sex offences in the past, and, as only the most serious offence was documented in their criminal records, it is possible that a number of those charged with violent offences had a sexual component to them. In addition, the personality characteristics of non-sex offenders may be unusual, in particular the presence of increased antisocial personality traits. A third issue is whether these findings are generalizable to all sex offenders, as the group of prisoners in this study constitutes the severer end of sexual criminals.

### *Demographic findings*

There were significant differences in some demographic features of elderly sex offenders compared with other elderly offenders. Sex offenders were more likely to be white, unemployed at the time of their offence, and less likely to have a past psychiatric history recorded in their medical notes. The most significant difference was that the sex offenders' last main profession was more likely to be a driver of a car, van, or truck. This would accord with the finding that there were increased schizoid traits found in elderly sex offenders. One explanation for this association is that those with schizoid personality traits are more attracted to these professions. The nature of the occupation may itself contribute to the risk of sex offending. As it may involve long solitary periods, interpersonal skills may be eroded, and family and peer relationships may be damaged. It is also possible that itinerant professions offer sex offenders opportunities to commit



crimes in various locations and evade detection by the police authorities there. The latter explanation is not supported by the fact that 81% of all the sex offenders in this study said that the place of the offence was their own home. However, as this is the offence for which they were most recently caught, it is possible that they had been sexually offending undetected during their work in the past. The marital status of sex offenders was similar to non-sex offenders. 31% of the sex offenders were single, markedly different from the UK population, where 7% of men aged over 65 are single.<sup>52</sup>

Another study, using data from a survey of 85,000 sex offenders in US state prisons, provides information on offence characteristics of younger sex offenders (average age 30-35 years).<sup>53</sup> With the caveat that this investigation is from the US and conducted in 1997, the study reported in this thesis found that victims were more likely to be female, under 11 years old, and the perpetrator related to the victim as father, stepfather, or grandfather. The sex offenders in this sample were more likely to have multiple victims, offend in their own homes, and less likely to sexually assault strangers than in the US study. As this study relates to current charges only, it is unlikely that so many had been offending for less than one year (47%) and had so few victims (38% reported one victim). It was found that elderly sex offenders disclosed that they had been sexually abused as children in 33% of cases. This compares with 35% reporting childhood sexual abuse in a treatment centre for sex offenders,<sup>54</sup> and 28% of sex offenders in US prisons stating they suffered physical or sexual abuse as children.<sup>53</sup>

### *Psychiatric diagnoses*

There are two other groups that can be compared with the data reported here: younger incarcerated sex offenders and elderly persons in the community. The largest study of the psychiatric diagnoses of sentenced adult male sex offenders in a general prison population



was conducted in Canada using standardized semi-structured clinical interviews generating DSM-III diagnoses. The average age of the 103 men interviewed was between 25 and 30 years.<sup>55</sup> Lifetime prevalence rates, rather than present state diagnoses, were reported. This Canadian investigation found that none of the sex offenders had organic disorder, 6% suffered from psychosis, and 43% had antisocial personality disorder. The study reported in this thesis found much lower rates of antisocial personality disorder (5%).

I am not aware of any research on personality in sex offenders that uses the personality trait dimensions of the DSM. These results accord with one study using the Eysenck Personality Questionnaire in which sex offenders were found to be more introverted than violent offenders.<sup>56</sup> The findings of increased schizoid, obsessive-compulsive, and avoidant personality traits support the view of Soothill and others that sex offending is a manifestation of a “long-lasting Achilles heel.”<sup>57</sup> This is normally kept in check by compensatory satisfactions or pressures, but liable to re-emerge in times of stress, such as retirement and physical illness. The social detachment and restricted emotionality that feature in schizoid personality, and the social inhibition and inadequacy of avoidant personality, would also fit into Finkelhor’s influential model of child sex offending in that these personality factors may prevent or “block” the creation of normalising peer relationships, and may explain why the sex offender emotionally relates with children, what Finkelhor terms “blockage” and “emotional congruence” respectively.<sup>58</sup>

As described above, studies in community elderly persons have found that 2% have a psychotic illness, 1% have dementia in men aged 65-69, GMS depression in 6%,<sup>40</sup> and antisocial personality disorder in less than 1%.<sup>36</sup> Elderly sex offending does not appear, therefore, to be a consequence of dementia. However, it remains possible that men with dementia conduct higher rates of aberrant sexual behaviour than other elderly men but

that it is not regarded as a sex offence, is not prosecuted, is not considered severe enough to warrant a prison sentence, or is diverted from the criminal justice system on sentencing.

In summary, compared with younger adults imprisoned for sex offences, elderly sex offenders have fewer antisocial personality disorders, and in contrast to elderly community persons, elderly sex offenders have higher rates of psychotic illness, major depression, and antisocial personality disorder, but similar rates of dementia. However, these are non-specific findings, applying equally to elderly non-sex offenders.

### *Genito-urinary problems in sex offenders*

The finding that sex offenders have more genito-urinary problems than non-sex offenders appears to be a novel one for any age group. There are a number of possible explanations for this. All of them are speculative and evidence in support is scant. This association may be explained by the presence of a third common factor – childhood sexual abuse. As sex offenders have often been subjected to childhood sexual abuse themselves<sup>54</sup> (one-third of this sample reported it), genito-urinary problems may be a physical consequence of this abuse or a lifetime of promiscuous sexual behaviour that has been shown to be correlated with childhood sexual abuse. Another explanation of this association is that an awareness of genito-urinary problems in these men may be part of them gaining insight into their crimes. Insight into sexual offending may move through a phase where the core psychological conflicts are somatised to genito-urinary problems before deeper levels of insight are gained. Furthermore, genito-urinary problems, alongside a variety of other changes, in a small group of men may trigger sexual offending. Sexual offending may be a part of a psychological compensation for their sense of loss of symbols of power and masculinity, a “collapse of narcissism”, when older men stop working, their physical health deteriorates, they lose a perceived role, and, in some cases, a partner.<sup>59</sup>



## **Psychiatric diagnoses of murderers**

It has been suggested that those serving life or other long sentences are more likely to suffer mental illness than other prisoners.<sup>60</sup> This study demonstrated that elderly prisoners convicted of murder were more likely to be diagnosed with antisocial personality disorder than non-murderers. However, this difference disappeared if those convicted of all violent (non-sexual) offences (including murder but also other convictions for violence against the person, such as grievous bodily harm) were compared with those convicted of non-violent offences. There was no difference in the other psychiatric diagnoses of murderers compared to non-murderers, and the rates of psychosis, depressive illness, or any personality disorder were similar. Although this sample of murderers was small (n=37), it can be compared to the findings of a larger study that examined psychiatric disorder in 170 life-sentenced prisoners (94% of whom were convicted of murder or other homicide).<sup>61</sup> This larger investigation found that the rates of psychosis or neurosis were not different in the 170 “lifers” compared with other prisoners, but found significantly higher levels of personality disorder in the “lifers” (18% vs. 7%). It did not report on categories of personality disorder, such as antisocial. Therefore, both studies find an association between personality disorder and serious violent offending – consistent with population studies of violent offending.<sup>19</sup>



## **Future work**

Some priorities for future work include research on the epidemiology of psychiatric morbidity at earlier stages of the criminal justice system, especially prevalence studies of psychiatric conditions at court before diversion to the hospital system. In terms of elderly prisoners, research could investigate ways to improve the detection of depression, such as comparing screening measures, educational interventions, and other methods to improve detection. There is need for a randomised controlled trial of treatment for depression (and possibly personality disorder), although the practicalities of undertaking such a trial in prison may be complex. Treatment interventions could include increasing the opportunity for meaningful daytime activities, environmental factors (such as special wings for elderly prisoners in some prisons), and medication. Follow-up of this cohort of prisoners in about five years could identify demographic, criminological, and psychiatric risk factors for re-offending. The psychiatric morbidity of female elderly prisoners could also be considered if their numbers rise (in 1998, there were only 16 women over 59 years in English and Welsh prisons). The large number of personality disorders in this sample suggests that research on this disorder in the elderly may be useful. There is need for a validated diagnostic instrument in the elderly for personality disorder (with less emphasis on cluster B diagnoses), and community prevalence studies can be undertaken in nursing and residential homes. Although a longitudinal study of personality disordered men could examine which categories mature and which persist, longitudinal studies of personality disorders are notoriously difficult to undertake due to loss to follow-up.<sup>32</sup>

## **The future for elderly prisoners**

Virtually every elderly prisoner will be released and a clearer understanding of their health care needs is necessary to plan community treatment and support. An important challenge that this project has highlighted is the treatment of large numbers of depressed elderly men in custody. The greying of the prison population is an international trend and it is likely that developments in Britain will have wide application.

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# Appendix 1

Interview schedule covering demographic and criminological information



**ELDERLY PRISONERS**

**CODING SHEETS**

**Seena Fazel**  
**Research Fellow**  
**University of Oxford**  
**Warneford Hospital**  
**OXFORD OX3 7JX**

**Name of Subject:** .....

Information from LIDS

For all variables 8,88 - NOT APPLICABLE  
9,99 - NOT KNOWN

PRISONER SERIAL NO:

.....

NAME OF PRISON:

.....

PRISON NO:

.....

INTERVIEW DATE:

.....

DATE OF BIRTH:

.....

LAST KNOWN ADDRESS:

Town,  
district &  
postcode

.....

.....

.....

Most serious alleged offence:

Category:

Length of Sentence:

.....

Release Date:

.....

Date first convicted:

.....

Date of reception:

.....

Ref No

CRIMINAL PROFILE

CRIMPRO

☐

Medical Notes:

Major illnesses

Psych history

Medication

Location in prison:

= 1 ordinary   2 = hospital   3 = segregation   4 = R45   5 = other (specify)

Completed interview

- 0 = Refused      1= Yes
- 2 = Language Problem
- 3 = partly completed
- 4 =refused but evidence of mental abnormality



INFORMATION FROM INTERVIEW

What is your date of birth ?

AGE

Can you tell me how long altogether you have been in prison in relation to the current offence ?

Before asking you about medical problems I would like to get some information about your past.

BIRTH

Where were you born ?

- 1 = UK

2 = Ireland

3 = Europe

4 = West Africa

5 = Caribbean

6 = Indian Subcontinent

7 = Hong Kong, SE Asia, China

8 = Other (specify)

BIRTH

ETHNICITY

- code ethnic origin :

1 = Caucasian

2 = Afro-Caribbean

3 = Asian

4 = Chinese

5 = Other (specify)

ETHOR

I would like to ask you a few questions about your background circumstances before you came to prison.

MARITAL STATUS

- At the moment do you consider yourself to be (married/divorced etc)

1 Single

2 Married

3 Widowed

4 Divorced/separated

MARIT

At time of offence

LIVING SITUATION (first applicable number only)  
Just before you came into prison were you living with:

- 1 Spouse/cohabitee

2 Children

3 Other relative/friend

4 Alone/warden controlled

5 Other residents (Nursing/Res Home)

6 NFA (sleeping rough)

7 Unsettled lodgings (eg B&B, hostel)

LIVINGSI

ACCOMMODATION

- Were you living in :
- 1 = accommodation that you owned
  - 2 = self-contained accommodation that you rented
  - 3 = in a bedsit or rooms with shared amenities
  - 4 = in a hostel or other temporary accommodation
  - 5 = were you living on the streets
  - 6 = had you just arrived in this country
  - 7 = other
  - 8 = accommodation owned by children

ACCOM

- How long had you been living in (type of accommodation) before coming to prison ?
- 1 = one month or less
  - 2 = six months or less
  - 3 = one year or less
  - 4 = over a year

ACCOM TIME

- Do you have anywhere to stay when you get out of prison ?
- 5 = nowhere to go/don't know
- Code as above

ACCOM AFT

What was your postcode ?

.....

CONTACT

- Does anyone visit or write ? How often ?
- 0 = has no real contact with anyone in the outside
  - 1 = a visit or letter about once every month
  - 2 = a visit or letter more frequently than about once every month

EMPLOYMENT

- Just before you came into prison did you have any kind of paid work ?
- 0 = No
  - 1 = Yes

EMPL

What was your last job ?

.....

- Main profession/work:
- 1 = unemployed seeking work
  - 2 = unemployed not seeking work
  - 3 = retired
  - 4 = waiting to take up a job/education/training
  - 5 = in full-time education
  - 6 = long term sick
  - 7 = not working because bringing up family
  - 8 = living off crime
  - 9 = visiting this country
  - 10 = other

EMPLTYPE

- At the time you came to prison how long had you been unemployed /retired?
- 1 = one month or less
  - 2 = six months or less
  - 3 = one year or less
  - 4 = five years or less
  - 5 = ten years or less
  - 6 = never worked
  - 7 = 10 + years

EMPLTIME

**SOCIAL CLASS**

- 1 Professional, higher management, landowner
- 2 Intermediate
- 3 Skilled
- 4 Semi-skilled
- 5 Unskilled

SOCCLASS

**EDUCATION**

What age were you when you left school ?

EDUC

What age were you when you started school ?

Did you get any qualifications or certificates either at school or after ?

- 0 None
- 1 CSE, O Level or equivalent
- 2 Vocational
- 3 A Level and above
- 4 Uncertain

QUALIF



GENERAL HEALTH

How is your health in general ?

Would you say it was :

- 1 = very good
- 2 = good
- 3 = fair
- 4 = bad
- 5 = very bad

GENHEALTH

Do you have a current illness, disability or infirmity which has affected you in the last 3 months.

- 0 = No
- 1 = Mild
- 2 = Moderate
- 3 = Severe

What is the matter with you ?

CURHEALTH

(Enter number of systems affected)

CURSYST

Have you had to limit your activities ?

- 0 = Not at all
- 1 = Little
- 2 = To some extent
- 3 = Great Deal

CURINT

Do you have a long standing illness, disability or infirmity. By long standing I mean anything that has troubled you over a period of time or that is likely to effect you over a period of time ?

- 0 = No
- 1 = Mild
- 2 = Moderate
- 3 = Severe

What is the matter with you ?

LSHEALTH

(Enter number of systems affected)

LSSYST

Have you had to limit your activities ?

- 0 = Not at all
- 1 = Little
- 2 = To some extent
- 3 = Great Deal

LSINT

How many cigarettes a day do you smoke ?

CIG

Have you ever had a head injury ? \*\*<sup>1</sup>

PHI

Did you lose consciousness ? \*\*

Y/N

<sup>1</sup> \*\* 0 = no 1 = Yes

Have you ever had meningitis ? \*\*

MEN ☐

Have you ever had a brain clot or bleed ? \*\*

ICH ☐

Have you ever had epilepsy ? \*\*

EPILEPSY ☐

What do you think your main health problem is ?  
(record problem as defined by the prisoner)

Have you seen a psychiatrist during this sentence, or seen the prison doctor for psychiatric or nervous problems? (Including anxiety or depression)

0 = never  
1 = reports only  
2 = own request  
3 = request by other person (specify .....)

PSYCH ☐

What happened ?

0 = assessment - no further action  
1 = treatment by prison doctor  
2 = referral to visiting psychiatrist or to psychiatric hospital  
3 = transfer to psychiatric hospital  
4 = referral to other agency, eg probation, psychologist  
5 = other (state .....)

PSYCHIN ☐

Were you happy with that ? If not, why not ?

0 = satisfied  
1 = no confidentiality  
2 = not enough time  
3 = not prescribed desired medication  
4 = other (state .....)

PSYCHOUT ☐

Have you seen a psychiatrist before coming into prison,  
or your GP for psychiatric or nervous problems ?

PSYCHBE ☐

Have you seen anyone else for treatment for psychiatric problems - such as a psychologist or probation officer ?  
(Explain this includes nervous troubles such as anxiety etc.)

0 = no  
1 = psychologist  
2 = probation officer  
3 = prison officer  
4 = chaplain  
5 = other  
6 = multiple

PSYCHOTHER ☐

if not: Do you feel you need any help with such problems ?

0 = No                      1 = Yes

☐

Have you had any medical treatments or been given drugs or medicines by a doctor during this time in prison ?

0 = No

1 = Yes

medication	.....	MED	<div></div>
psychological treatments	.....		
individual/group psychotherapy	.....		

Are you currently having any medical treatment ?

0 = No

1 = Yes

medication	.....	CURMED	<div></div>
psychological treatments	.....		
individual/group psychotherapy	.....		

Do you think you'll try and get psychiatric help once you leave prison ?

0 = No

1 = Yes

PSYCHAFT	<div></div>
----------	-------------

How do you think psychiatric treatment can help you / what do you think a psychiatrist could do for you ?

*rate motivation for treatment:*

0 = No desire for treatment

1 = No desire but would accept if offered

2 = Ambivalent about personal suitability

3 = Wants treatment partially for side benefits

4 = Wants treatment

RXMOTIV	<div></div>
---------	-------------

Have you had any previous convictions ?

How many people do you share a room with ?

How many hours a day do you work ?

What do you do ?

BARTHEL Score (out of 20)



# Appendix 2

Additional interview for sex offenders on offence characteristics

**Descriptive Questions**

Subject No:

Age at time of offence:

History of sexual abuse:      No = 0  
   Yes = 1

Early losses or numerous care-takers in childhood:      No = 0  
   Yes = 1

Relationship to victim:      Father/grandfather      = 0  
   Stepfather                      = 1  
   Relative                        = 2  
   Acquaintance                = 3  
   Stranger                        = 4

Sex of victims:      Male only                      = 0  
   Female only                    = 1  
   Both sexes                    = 2

Age of victims at start of offence:      less than 11      = 0  
   11 or over        = 1

Number of victims:      1                                = 0  
   2 - 4                        = 1  
   more than 4                = 2

Length of time offending:      < 1 year                    = 0  
   1 - 5 years                = 1  
   > 10 years                = 2  
   5 - 10 years               = 3

Places of offence      own home                    = 0  
   victim's home              = 1  
   other                         = 2

Presence of co-perpetrator:      No                    = 0  
   Yes                   = 1

Nature of offence:      penetration                = 0  
   non-penetration           = 1  
   non-contact                = 2

Recent stressors:      No = 0  
   Yes = 1

## Appendix 3

Paper entitled "Dementia in prison: ethical and legal implications", published in *The Journal of Medical Ethics* 2002; 28:156-159.

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# Dementia in prison: ethical and legal implications

S Fazel, J McMillan, I O'Donnell

See end of article for  
authors' affiliations

*J Med Ethics* 2002;28:156-159

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As the number of elderly prisoners increases in the UK and other Western countries, there will be individuals who develop dementia whilst in custody. We present two case vignettes of men with dementia in English prisons, and explore some of the ethical implications that their continuing detention raises. We find little to support their detention in the various purposes of prison put forward by legal philosophers and penologists, and conclude by raising some of the possible implications of The Human Rights Act 1998.

There are about nine million people held in penal institutions around the world. America now detains over two million persons in custody (a rate of 680 per 100 000 population), and there are about 65 000 people in prisons in England and Wales (a rate of 125 per 100 000).<sup>1</sup> These numbers are projected to rise, and the British government expects there will be another 18 000 prisoners by 2007. The number of elderly prisoners is also rising. There are now more than 1 000 men aged 60 and over in English and Welsh prisons, more than three times the level of a decade ago.<sup>2</sup> The proportion of elderly compared to younger adults in prisons has also been increasing, and a similar trend has been reported in the US and Canada.<sup>3</sup> The implications of the changing demographic structures of prison populations have been discussed elsewhere but we are not aware of any exploration of the ethical issues raised by individuals developing dementia during their imprisonment.<sup>4</sup>

The large studies on the psychiatric morbidity of prisoners have excluded those over 65. They have found that the burden of treatable mental disorders is substantial, and that rates of psychotic illnesses and major depression are 2-4 times higher than community samples of similar age.<sup>5</sup> We recently conducted a study on a group of 203 male prisoners in England and Wales aged over 59, representing a fifth of all elderly sentenced men in the prison system.<sup>6</sup> Two cases of dementia were identified using a reliable and valid diagnostic instrument, a semi-structured standardised clinical interview called the geriatric mental state schedule (GMS). Geriatric-mental-state-generated cases of dementia have been shown to correlate well with DSM III diagnoses of dementia.<sup>7</sup> A brief neuropsychological test—the mini-mental state examination (MMSE)—was administered to screen for cognitive impairment and a measure was taken of their ability to perform tasks associated with independent living (Barthel index). Both individuals developed dementia whilst serving their prison sentences. They remained in prison, probably due to their lack of any overwhelming physical disability. This paper will present brief details of these individuals, and then discuss some issues that their continuing custody raises.

## CASE VIGNETTES

### Case 1

At interview, AB was 69 years old. He was convicted at the age of 66 for incest, and was given a six year sentence. In the third

year of his sentence, he suffered a left posterior parietal infarct, which was identified on brain scanning by computed tomography (CT). He was interviewed four months after this stroke, and scored 12/30 on the MMSE (where a score below 24 indicates a high likelihood of dementia). After the GMS had been administered, he was given a diagnosis of vascular dementia. He remained physically independent for activities of daily living, scoring 20/20 on the Barthel. He had no recollection of his crime and no idea that he was in prison. He was so demented that he could not answer any of the questions put to him during interview. Information on previous convictions was not available because the local prison database only records the index offence.

### Case 2

CD was 78 years old. He was convicted of the serious sexual assault and murder of a child, and received a life sentence. He had been continuously in custody for well over a decade. In 1997, his medical notes recorded mild cognitive impairment that had progressively worsened. On interview in 1999, he scored 9/30 on the MMSE. He was given a diagnosis of Alzheimer's dementia. His Barthel score was 17/20. He was housed on the ground floor as he needed help with mobility, and was unable to climb stairs. He was insightful about his crime, expressing remorse: "I am in for life, and I should continue to be in for life. I would never kill another child, but who could tell what you're likely to do". He kept a photograph of his victim in his wallet, remembering his name, explaining that he "never got over it". He explained that alcohol intoxication contributed to his crime: "If I hadn't been drinking, [I] wouldn't have strangled a little boy". He read one of us [SF] part of his last annual sentence planning review that described him as having "a sexually deviant personality" with "sado-masochistic fantasies" and remarked that: "I don't have none of this now". Information on previous convictions was not available.

## DISCUSSION

The presence of men with dementia in prison raises important ethical issues. The various purposes of imprisonment, and punishment more generally, have been extensively discussed by penologists, philosophers, and those involved in public policy.<sup>8</sup> There are legal purposes to imprisonment—prisons are necessary to hold those awaiting trial or sentence, to enforce court orders, and to incapacitate convicted offenders. Prison is



also thought to have some deterrent value, both to the individual under punishment and to the general public. Finally, prisons may also serve symbolically as a means for the state and the public to express their collective denunciation of criminal behaviour.

Rehabilitation is an important goal for prisons. There are essentially two ways that prisons can rehabilitate individuals—first, by positive action such as access to work, training and education, or through exposure to various types of treatment programmes. Second, by addressing the factors that contribute to offending (unemployment, drug abuse, temperament), the prison regime may reduce the risk of re-offending. The rehabilitative ideal waned in the early 1970s but there has recently been a resurgence of interest in “what works” for offenders.<sup>17</sup> All of these ideas about prison focus on its consequences—deterrence, rehabilitation—and are embraced as primary rationales for punishment because they are believed to have the potential to reduce the crime rate. Prison is also seen as a deserved punishment for certain offences. In this penological tradition, the primary rationale is desert and the key criteria are the seriousness of the crime committed and the offender’s culpability. The emphasis is on retribution rather than crime reduction.

How relevant are these purposes of prison for individuals with dementia? For those who developed dementia before sentencing, it is unlikely that they will be fit to stand trial and hospital diversion is the most likely outcome. For those who develop dementia whilst in prison, as in the two cases presented above, we will explore the relevance of various purposes of prison.

### DETERRENCE

At first there might appear to be some reasons for thinking that keeping people like AB and CD in prison might add to the general deterrent effect of imprisonment. Those contemplating similar crimes would know that if caught they would be punished even if they were unwell. This knowledge would strengthen the disincentive to perform illegal actions of this kind.

The problem with this argument is that prisons already place people with other severe illnesses into health care facilities. This means that, in order to keep people like AB and CD in prison to add to the general deterrent effect of imprisonment, people contemplating crime would need to consider the possibility that they would not be released from prison even if demented. Studies of offender decision making show, however, that the likelihood of arrest has greater deterrent value than the severity of punishment, and that increasing penal severity has a modest effect on the decision making calculus of individual offenders.<sup>18</sup>

What then about the effect of individual deterrence? Might the prospect of continued incarceration reduce the incentive to commit crimes for those who already have dementia? This argument does not work as people who are as demented as AB and CD are not able to think through the consequences of criminal actions. It might be objected that those with early dementia might think that even if caught they would be released when they became sufficiently unwell. We do not have the same concern, however, that transferring out of prison those with other illnesses creates an incentive for those at the early stages of illnesses to commit crimes. It would be unethical not to release into care those suffering from advanced cancer because it might make others who have just been given a diagnosis of cancer more likely to commit crimes. Once diagnosed, their primary role is patient rather than prisoner.

### INCAPACITATION

There is evidence from studies carried out in the courts that individuals with mild dementia commit crimes,<sup>19</sup> and it is

therefore possible to argue that by detaining them in prison, society is protected from any further offences. It may be that some would feel that prison serves this purpose in the case of CD, who himself admitted that he was unsure whether he would reoffend. The parole board, who regularly review the case of CD and other life-sentenced prisoners, may have felt that he continued to pose a risk to the public, and this may be the reason for his continued detention. But there will be a point at which the level of dementia of such prisoners as AB and CD renders them incapable of committing further crimes, particularly if they are also physically disabled. When this point is reached, the security of a prison is not required to prevent further offending.

### SYMBOLIC PURPOSE OF IMPRISONMENT

This leaves the question of whether prisons serve a symbolic role in detaining individuals with dementia, reflecting the desire of the state and the public to express their collective disapproval of crime. There is little doubt that some elements of the general public support the incarceration of individuals with mental illness; this was reflected in the trial of Peter Sutcliffe, the so-called “Yorkshire Ripper”, where the jury refused to accept the views of psychiatrists and sent Sutcliffe to prison (from where he was moved to a secure hospital). Public opinion should not determine public policy on the disposal of mentally disordered offenders just as it does not determine policy in other health care areas. The horror felt by most people at CD’s crime may mean that his continued detention in prison serves a symbolic purpose for society. As a mandatory lifer, his release decision rests with the home secretary, and thus its timing may be influenced by political considerations.

### REHABILITATION

Rehabilitation through offender treatment programmes, education, and work are of little relevance as they require cognitive abilities incommensurate with dementia. Addressing factors that may have contributed to offending will make little difference, either because they are no longer present, such as drug abuse, or cannot be addressed, such as personality problems. Treating co-existing severe psychiatric illnesses, such as psychoses, may, however, reduce the likelihood of further offending. Research has shown that aggressive behaviour in elderly persons in a nursing home was associated with the presence of delusions,<sup>20</sup> and that effective treatment of psychosis is possible in the elderly. Overall, however, it is likely that the risk of recidivism on release to the community, hospital, or nursing and residential homes is low in individuals with dementia, although they may show some aggression towards staff and other patients. The risk of future aggression is not sufficient reason to incarcerate these individuals, and specialist nursing homes would be better equipped to manage these behaviours than prisons.

### RETRIBUTIVE PUNISHMENT (PUNITIVE JUSTICE OR JUST DESERTS)

We have left our discussion of retributive punishment until last because it is the most controversial and difficult issue. It is controversial because many people think that once the deterrent and rehabilitative functions of punishment have been performed, there is no additional reason to punish, so long as the individual concerned no longer poses a threat to public safety. People who hold this view would argue for the release of AB and CD. It is a difficult issue because there are so many supposed defences of retributive punishment. As well as having a basis in many religions, it is also an idea with a long philosophical history. Thinkers such as Kant, Hegel, and Mill have written about it. It has also been given attention in more recent years.<sup>14–16</sup> Philosophical opinion about which theory of



retributive punishment is most relevant is so divided that Nigel Walker has distinguished between 15 different schools of thought.<sup>17</sup> Clearly we will not be able to survey all of the theories and compare their claims with the situations of AB and CD. What we will do is outline some of the basic views of one of the more prominent (albeit controversial) accounts of retributive punishment and show that even on this account there are good reasons for ceasing the punishment of AB and CD.

One of the more recent attempts to develop a coherent notion of retributive punishment was made by Robert Nozick.<sup>18</sup> He thinks that in addition to its deterrent and rehabilitative functions, punishment is important for what he calls "connecting with correct values".<sup>19</sup> This is based on the presumption of a rational offender. The vocabulary of punishment does not apply with the same force to the actor whose capacity to reason has become clouded. If what is required in order for people to be reconnected with correct values is that they come to see the actions for which they are being punished as wrong and ones that they should not have performed, then there would seem to be little point in continuing to punish AB and CD. AB does not know that he is in prison and cannot remember what it is that he has done so there is little prospect of him re-evaluating his past preferences. CD is already remorseful for what he did, so for different reasons continued punishment holds little purpose for him. The problem is that Nozick has something different in mind when he discusses connecting with correct values. He thinks it's not just about people appropriating the correct values but has more to do with them being compelled to live in accordance with correct values.

Correct values are themselves without causal power, and the wrongdoer chooses not to give them effect in his life. So others must give them some effect in his life, in a secondary way. When he undergoes punishment these correct values are not totally without effect in his life (even though he does not follow them), because we hit him over the head with them. Through punishment, we give the correct values, *qua* correct values, some significant effect in his life, willy-nilly linking him up to them.<sup>20</sup>

This seems to be highly applicable to AB and CD. Both of them have been found guilty of sexual offences with minors. Offences of this sort are ones that exhibit values and sexual preferences that most people find utterly unacceptable. Punishing them for these crimes serves to reconnect them with appropriate values even if they do not come to see that what they did was wrong. If we think of a thief who believes, and will continue to believe, that breaking into houses and cars is justifiable, we may want this person to be punished or reconnected with correct values even if he is not going to change his personal ethical system. What is still problematic is the level of dementia that is consistent with reconnection of this sort. For Nozick it is sufficient that people know they are being punished.

Punishment does not wipe out the wrong, the past is not changed, but the disconnection with value is repaired (though in a second best way); non-linkage is eradicated. Also, the penalty wipes out or attenuates the wrongdoer's link with incorrect values, so that he now regrets having followed them or at least is less pleased that he did.<sup>21</sup>

The suggestion here is that if we cannot get people to reform then a second best is for them to regret having followed the values they did. This means that there is a lower threshold for those capable of meeting the point of retributive

punishment. If people are incapable by reason of dementia of re-evaluating inappropriate values then it might be sufficient that they know others think what they did was bad, and that they are being punished for this. He suggests the following condition:

It is not so very difficult to get someone to understand that they are being punished because others view what they did as wrong, and intend for them to realize that this is happening.<sup>21</sup>

This may apply to the ordinary case where somebody is punished and is not prepared to adjust their values. Merely being able to know that others disagree and that this is why they are being punished is sufficient. What is less clear is whether AB and CD satisfy this condition. AB does not know that he is being punished or what he has done. This is a good reason for thinking that it does not make sense on Nozick's account of retribution to continue to punish him. CD, on the other hand, does know what he's done and why he's being punished so meets Nozick's condition.

It does not follow from this that we ought to relocate AB and not CD to a non-punitive institution. Even if we think that Nozick is right, it does not imply that imprisonment ought exclusively to be about retribution. There are powerful arguments that its function is limited to rehabilitation and prevention or that a variety of penal purposes compete for priority.<sup>22</sup> Even within a rigid retributive framework we should look more carefully at the continued detention of prisoners with dementia.

Ethically, the same question can be posed towards the incarceration of those with severe physical chronic illness. Is it appropriate to keep someone with a severe progressive cancer in prison? What purpose does it serve? The introduction of the Human Rights Act 1998 (adopted from the European Convention on Human Rights), which came into full force in the UK on 2 October 2000, may assist in the clarification of how justifications for punishment may change in accordance with the deteriorating health of a prisoner. Article 3 forbids inhuman or degrading treatment or punishment of those in detention. The act also stipulates a new statutory duty for all public authorities to act compatibly with human rights (section 6).<sup>23</sup> Good practice in the psychiatric care of the elderly would incorporate a community orientation, a multidisciplinary approach, an emphasis on abilities as well as deficits, and the aim to improve quality of life rather than simply to alleviate symptoms.<sup>24</sup> It requires the development of skills and facilities that are specialised, and unlikely to be met in the prison setting. The lack of appropriate health care for sick prisoners has been declared as a form of inhuman or degrading treatment. In the case of a prisoner who developed a severe depression during an unusually long and stressful remand period, a violation of the convention was confirmed by the European Court.<sup>25</sup> On two occasions, governments have had to demonstrate that high levels of medical care were available for chronically sick prisoners in order to counter charges under article 3 of the convention.<sup>26</sup> In many ways, then, the groundwork has been laid for a test case involving someone detained in custody with dementia. As a ruling has been made in favour of prisoners with chronic physical illness, it would seem unlikely that a radically different approach would be taken to those experiencing similar difficulties as a result of dementia.

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## Appendix 4

Paper entitled “Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys”, published in *The Lancet* 2002;359:545-550.

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## Articles

# Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys

Seena Fazel, John Danesh

## Summary

**Background** About 9 million people are imprisoned worldwide, but the number with serious mental disorders (psychosis, major depression, and antisocial personality disorder) is unknown. We did a systematic review of surveys on such disorders in general prison populations in western countries.

**Methods** We searched for psychiatric surveys that were based on interviews of unselected prison populations and included diagnoses of psychotic illnesses or major depression within the previous 6 months, or a history of any personality disorder. We did computer-assisted searches, scanned reference lists, searched journals, and corresponded with authors. We determined prevalence rates of serious mental disorders, sex, type of prisoner (detainee or sentenced inmate), and other characteristics.

**Findings** 62 surveys from 12 countries included 22 790 prisoners (mean age 29 years, 18 530 [81%] men, 2568 [26%] of 9776 were violent offenders). 3.7% of men (95% CI 3.3–4.1) had psychotic illnesses, 10% (9–11) major depression, and 65% (61–68) a personality disorder, including 47% (46–48) with antisocial personality disorder. 4.0% of women (3.2–5.1) had psychotic illnesses, 12% (11–14) major depression, and 42% (38–45) a personality disorder, including 21% (19–23) with antisocial personality disorder. Although there was substantial heterogeneity among studies (especially for antisocial personality disorder), only a small proportion was explained by differences in prevalence rates between detainees and sentenced inmates. Prisoners were several times more likely to have psychosis and major depression, and about ten times more likely to have antisocial personality disorder, than the general population.

**Interpretation** Worldwide, several million prisoners probably have serious mental disorders, but how well prison services are addressing these problems is not known.

*Lancet* 2002; 359: 545–50

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## Introduction

About 9 million people are imprisoned worldwide, including 2 million in the USA and 70 000 in the UK.<sup>1</sup> Many psychiatric surveys have been done in prisons, but they have generally been small, have often included selected populations (such as prisoners referred to psychiatric services), and have not been assessed systematically. Indeed, three reviews included a total of only ten studies in general prison populations.<sup>2–4</sup> More reliable estimates of the prevalence rates of serious mental disorders in prisoners, such as psychotic illnesses, major depression, and antisocial personality disorder should help inform public policy and prison health services. We have done a systematic review of psychiatric surveys of people in general prison populations in western countries (with results subdivided by disorder, sex, and type of prisoner).

## Methods

We searched for studies of the prevalence of psychotic illnesses, major depression, or any personality disorder in general prison populations of western countries published between January, 1966, and January, 2001. We did computer-based searches (EMBASE, PsycINFO, MEDLINE, US National Criminal Justice Reference System Abstract Database), scanned relevant reference lists, searched forensic psychiatry and other relevant journals by hand, and discussed and corresponded with authors.<sup>5–71</sup> We have not included diagnoses of substance abuse because prevalence in prisoners is likely to be substantially affected by various reporting and ascertainment biases. We used combinations of keywords relating to psychiatric illnesses (eg, mental\*, psych\*, depress\*, personality) and to prisoners (eg, inmate, sentenced, remand, detainee, felon). Non-English articles were translated. We included surveys that did not sample prisoners referred for psychiatric assessment; that related diagnoses of psychotic illnesses or major depression to symptoms in the previous 6 months, or a diagnosis of personality disorder to lifelong behaviour; and involved diagnoses made by clinical examination or interviewers using diagnostic instruments (hence, surveys that used only self-report instruments, such as the depression component of the UK Office for National Statistics' study, were ineligible<sup>60</sup>). Moreover, to reduce variability in diagnosis of personality disorders, we only included surveys in which validated instruments had been used. A few studies were not included because they were done in non-western populations (314 prisoners from Dubai, Kuwait, and Nigeria<sup>72–74</sup>), reported substance abuse as the main diagnosis,<sup>75</sup> or used a hierarchy of exclusive diagnoses.<sup>76</sup>

For every eligible study, we independently determined (with a fixed protocol supplemented by correspondence with authors; any discrepancies were resolved by further



review) geographical location, year of interview, number of prisoners interviewed, sampling method, type of prisoner (detainee *vs* sentenced inmate), response rate, diagnostic instruments and criteria, type of interviewer, number diagnosed with relevant disorders, mean age, proportion male, number charged with violent offences, and mean duration of imprisonment at time of interview. Psychotic illnesses included mainly schizophrenia but also schizophreniform disorder, manic episodes, and delusional disorder. Major depression included diagnoses of unipolar affective disorder (symptoms had to be present for at least 2 weeks). Any reported personality disorder was recorded, with particular emphasis given to antisocial (or dissocial) personality disorder because of its prognostic value and potential treatability.<sup>77</sup> If possible, results were tabulated separately by prisoners' status (ie, detainees [remand prisoners in the UK] *vs* sentenced inmates). Several studies did not provide separate results for detainees and sentenced prisoners; they were combined in analyses and called mixed studies.<sup>23-26,51,52,69</sup>

As previously described,<sup>78,79</sup> prevalence rates of various disorders were combined from different studies by direct summation of numerators and denominators (providing weighted averages), subdivided by sex and by prisoners' status. The results from smaller studies—those with less than 250 prisoners—were combined in figures 1–3 and when displaying the results from separate studies and calculating standard  $\chi^2$  tests of heterogeneity. Possible sources of heterogeneity were investigated by grouping studies according to potentially relevant characteristics and by  $\chi^2$  tests. To make some allowance for multiple comparisons, 99% CIs were used for individual studies (or aggregations of smaller studies), and 95% CIs for subtotals and overall totals.

#### Role of the funding source

The sponsors of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

## Results

### Study and baseline characteristics

62 relevant surveys, reported in 66 publications, included a total of 22 790 prisoners of whom 18 530 (81%) were men. In 47 surveys (12 859 prisoners) that included information on age, weighted mean age of prisoners was 29 years. 2568 (26%) of 9776 prisoners were charged with, or convicted of, violent offences (27 surveys included these data). These baseline characteristics varied little by disorder. The studies were from Australia (598 prisoners),<sup>18,39,50,52,61,69</sup> Canada (3196),<sup>5,27,37,59,67,68</sup> Denmark (583),<sup>12,32</sup> Finland (1317),<sup>23,25,55</sup> Ireland (280),<sup>15,49</sup> Netherlands (450),<sup>14,21,35</sup> New Zealand (1431),<sup>10,19,20</sup> Norway (41),<sup>43,46</sup> Spain (99),<sup>65</sup> Sweden (103),<sup>40</sup> UK (5548),<sup>6,8,11,22,24,28,33,41,42,46,47,51,53,60</sup> and the USA (9144).<sup>7,9,13,16,17,24,29-31,34,36,38,44,45,48,54,56-58,62-64,70,71</sup> 28 of the 62 surveys (11 071 prisoners) were done before 1990<sup>7,13,16-18,23-25,27,28,30-33,36-39,41,42,44,50,51,57-59,62,70,71</sup> but, with the exception of female antisocial personality disorder, the overall prevalence rates did not differ significantly by whether surveys were done before or after 1990. Reported sampling strategies included complete sampling of entire prisons (1478 prisoners),<sup>8,29,60,90,92,66,67</sup> simple random sampling (3768),<sup>11,13,17,18,20-23,25,33,34,36,37,41,44,47,51,54</sup> stratified random sampling (10 563),<sup>7,9,13,24,27,28,31,38,39,45,46,53,60,70</sup> inclusion of consecutive prisoners (3144),<sup>14,16,35,42,49,56-59,62,64,68,69</sup> sampling of various prisoner subgroups (482),<sup>12,55,61</sup> and

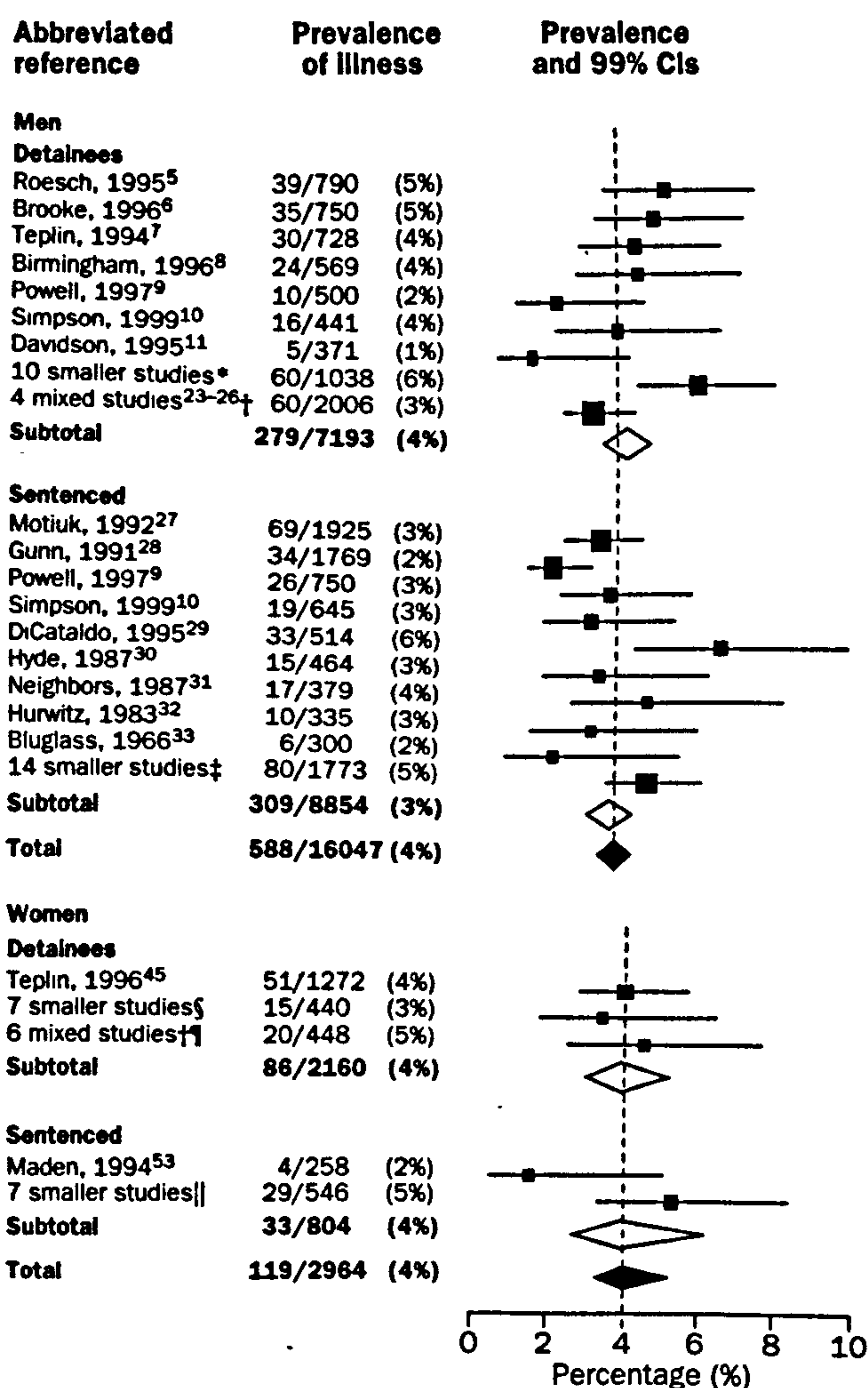


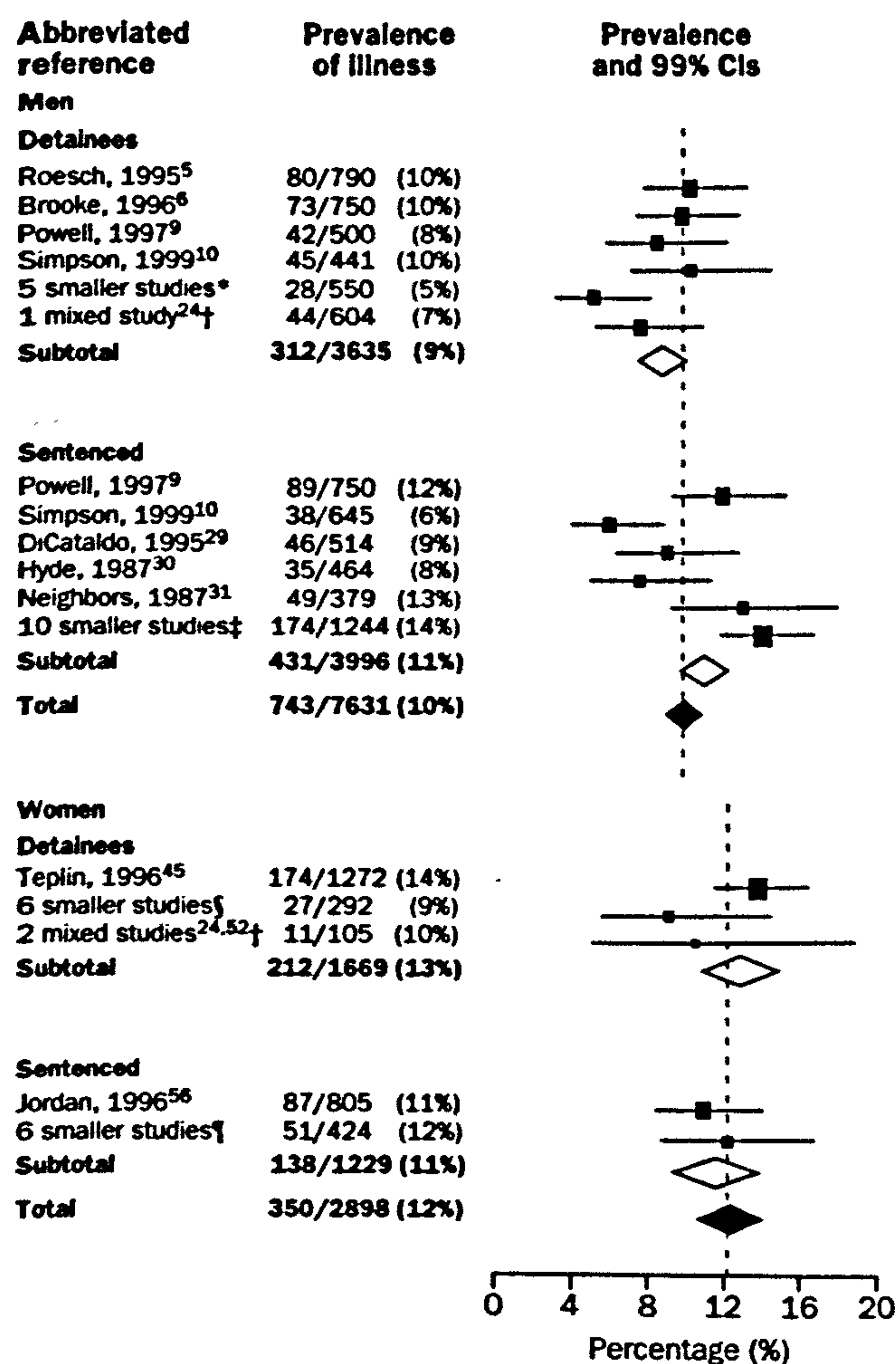
Figure 1: Prevalence of psychotic illnesses in 49 prison surveys

Size of black areas is proportional to number of prisoners. Open diamonds=subtotals; shaded diamonds=grand totals. \*References 12–18, 20–22. †Mixed studies=surveys that did not report results separately for detainees and sentenced inmates. ‡References 15, 20, 21, 34–44. §References 11, 12, 46–50. ¶References 23–26, 51, 52. ||References 10, 20, 36, 39, 49, 50, 57.

various combinations of such strategies (2374).<sup>5,10,26</sup> Apart from seven studies that included only 13% (2876 prisoners) of the total sample,<sup>27,34,36,40,55</sup> the reported response rates were higher than 80%; in five<sup>27,34,36,40,55</sup> of the seven surveys with lower participation rates, rates were still higher than 65%.

In some studies, diagnoses of psychotic illnesses and major depression were based solely on clinical examination, but in most studies trained interviewers had made diagnoses using validated questionnaires. For psychotic illnesses and depression, the instruments included: Diagnostic Interview Schedule,<sup>5,7,9,24,27,29,34,35,37,45,57,62</sup> Composite International Diagnostic Interview,<sup>10,20,56</sup> Structured Clinical Interview for the Diagnostic and Statistical Manual,<sup>30,31,39,50,52,66</sup> Clinical Interview Schedule,<sup>6,8,11,28,46,53</sup> Present State Examination-10,<sup>12,60</sup> Schedule for Affective Disorders,<sup>26</sup> Diagnostic Interview for Children and Adolescents—Adolescent Version,<sup>55</sup> and Schedule for Clinical Assessment in Neuropsychiatry.<sup>49</sup> The following validated questionnaires were used by interviewers in studies of personality disorder: the Diagnostic Interview Schedule,<sup>5,7,9,24,27,31,34,35,37,45,56-59,61,62,65</sup> Structured Clinical Interview for Diagnostic and Statistical Manual Personality Disorders,<sup>19,43,60,69</sup> Personality Disorder





**Figure 2: Prevalence of major depression in 31 prison surveys**  
Size of black areas is proportional to number of prisoners. Open diamonds=subtotals; shaded diamonds=grand totals. \*References 12, 13, 20–22. †Mixed studies=surveys that did not report results separately for detainees and sentenced inmates. ‡References 20, 21, 34, 35, 37, 39, 42, 43, 54, 55. §References 12, 47–50, 71. ¶References 10, 20, 39, 49, 50, 57.

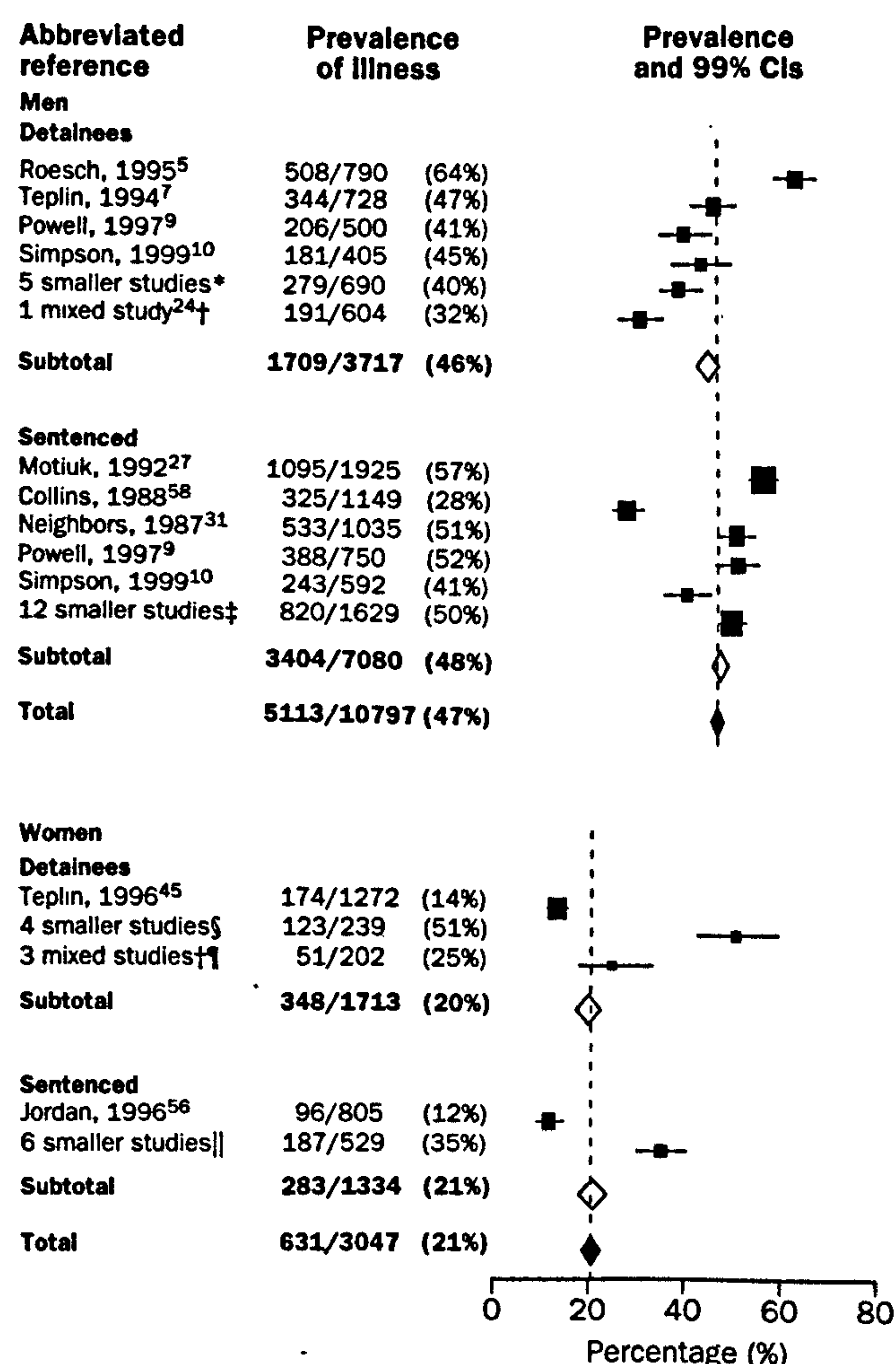
Questionnaire,<sup>19</sup> and Personality Disorder Examination.<sup>67</sup> There was generally no substantial heterogeneity within groupings of studies with fewer than 250 prisoners, and most studies reported insufficient detail to enable reliable assessments of the extent of psychiatric comorbidity.

#### Psychotic illnesses

49 relevant surveys on psychotic illnesses included a total of 19 011 prisoners.<sup>3,18,20–33,57</sup> Overall, 3.7% (95% CI 3.3–4.1, figure 1)—or 588 of 16 047 male prisoners—were diagnosed with a psychotic illness. There was substantial heterogeneity among these studies ( $\chi^2_{18}=68$ ,  $p<0.0001$ ), and only a small part of it was explained by possible differences between studies that used validated diagnostic instruments and those that did not (3.5 vs 4.3%, respectively;  $\chi^2_1=6.2$ ,  $p=0.01$ ). There were significant differences between studies done in the USA and those done elsewhere (4.5 vs 3.3%, respectively;  $\chi^2_1=13.7$ ,  $p=0.0002$ ). Overall, 4.0% (3.2–5.1, figure 1)—or 119 of 2964 female prisoners—were diagnosed with a psychotic illness. There was no significant heterogeneity between these studies ( $\chi^2_4=7.1$ ,  $p>0.10$ ).

#### Major depression

We identified 31 relevant surveys that reported on major depression including a total of 10 529



**Figure 3: Prevalence of antisocial personality disorder in 28 prison surveys**  
Size of black areas is proportional to number of prisoners. Open diamonds=subtotals; shaded diamonds=grand totals. \*References 12, 19, 21, 59, 60. †Mixed studies=surveys that did not report results separately for detainees and sentenced inmates. ‡References 19, 21, 34, 35, 37, 60–66. §References 12, 50, 67, 68. ¶References 24, 60, 69. ||References 24, 50, 60, 67–69.

prisoners.<sup>5,6,9,10,12,13,20–22,24,29–31,34,35,37,39,42,43,45,47–50,52,54–57,71</sup> Overall, 10% (9–11, figure 2)—or 743 of 7631 male prisoners—were diagnosed with major depression. There was substantial heterogeneity between these studies ( $\chi^2_{11}=64$ ,  $p<0.0001$ ), and this was only partly explained by differences between detainees and sentenced prisoners (9 vs 11%, respectively;  $\chi^2_1=10.0$ ,  $p=0.002$ ), between studies in which interviews were done by psychiatrists or not (7 vs 10%, respectively;  $\chi^2_1=14.2$ ,  $p=0.0002$ ), and between larger and smaller studies (9 vs 11%, respectively;  $\chi^2_1=6.2$ ,  $p=0.008$ ). Overall, 12% (11–14, figure 2)—or 350 of 2898 female prisoners—were diagnosed with major depression. Again, there was no significant heterogeneity between these studies ( $\chi^2_4=7.0$ ,  $p>0.10$ ).

#### Personality disorder

We identified 28 relevant surveys that reported on antisocial personality disorder including a total of 13 844 prisoners.<sup>5,7,9,10,12,19,21,27,31,34,35,37,43,45,56–65,67–70</sup> Overall, 47% (46–48, figure 3)—or 5113 of 10 797 male prisoners—were diagnosed with antisocial personality disorder. There was substantial heterogeneity between these studies ( $\chi^2_{11}=438$ ,  $p<0.0001$ ), and this was partly explained by differences between studies done in the



USA and those done elsewhere (43 vs 52%, respectively;  $\chi^2_1=93$ ,  $p<0.0001$ ). In a subsidiary analysis of the four studies in which investigators reported on any personality disorder in men, 65% (61–68)—or 989 of 1529 male prisoners—were diagnosed with some personality disorder (including antisocial personality disorder).<sup>10,40,44,46</sup> Overall, 21% (19–23, figure 3)—or 631 of 3047 female prisoners—were diagnosed with antisocial personality disorder. There was substantial heterogeneity between these studies ( $\chi^2_1=285$ ,  $p<0.0001$ ), much of which was accounted for by differences between larger and smaller studies (13 vs 37%, respectively;  $\chi^2_1=236$ ,  $p<0.0001$ ) and between studies done before and after 1990 (39 vs 17%, respectively;  $\chi^2_1=125$ ,  $p<0.0001$ ). There were also differences between studies done in the USA and those done elsewhere (18 vs 33%, respectively;  $\chi^2_1=64$ ,  $p<0.0001$ ) and between studies in which interviews were done by psychiatrists or not (42 vs 19%, respectively;  $\chi^2_1=67$ ,  $p<0.0001$ ). In a subsidiary analysis of the seven studies in which investigators reported on any personality disorder in women, 42% (38–45)—or 532 of 1281 female prisoners—were diagnosed with some personality disorder (including antisocial personality disorder).<sup>10,23,25,30,34,40,49</sup> In the five studies in which borderline personality disorder was reported, this diagnosis was made in 25% (22–29)—or 307 of 1208—female prisoners.<sup>10,30,34,40,49</sup>

## Discussion

Our results suggest that typically about one in seven prisoners in western countries have psychotic illnesses or major depression (disorders that might be risk factors for suicide),<sup>40</sup> and about one in two male prisoners and about one in five female prisoners have antisocial personality disorders. These findings might have several implications.

First, they indicate that the risks of having serious psychiatric disorders are substantially higher in prisoners than in the general population. Compared with the general American<sup>24,41</sup> or British<sup>42</sup> population of similar age, prisoners have about two-fold to four-fold excesses of psychotic illnesses and major depression, and about a ten-fold excess of antisocial personality disorder. More research is needed to elucidate to what extent these excesses are causes, consequences, or both, of imprisonment (for example, the effect of substance abuse on the prevalence of psychosis in prisoners is not known).

Second, our findings suggest that the burden of treatable serious mental disorder in prisoners is substantial. For example, application of these typical prevalence rates to the prison population of the USA suggests that a few hundred thousand prisoners might have psychotic illnesses, major depression, or both—an amount that is twice the number of patients in all American psychiatric hospitals combined.<sup>43</sup> Given the limited resources of most prisons, however, it seems doubtful whether most prisoners with these illnesses receive appropriate care, such as that mandated by the European Convention on Human Rights and other international charters.<sup>44</sup>

Finally, although only about one-third of the world's prisoners live in western countries, about 99% of available data from prison surveys are derived from western populations, which underscores the need for greater forensic psychiatric research in non-western populations.

Even though our review was restricted to surveys done in western countries, it included data gathered during

several decades from different prison populations in 12 countries. The prevalence of psychiatric disorders might, therefore, have been expected to vary substantially as a result of such differences, as well as because of differences in medical and judicial systems and in survey methods. But, although we noted that estimates of prevalence of antisocial personality disorder varied considerably, there was much less variation in psychotic illnesses and major depression (perhaps, in part, because of greater diagnostic consensus for these two disorders). Despite the likelihood that there are some real differences in the prevalence of psychiatric disorders in different prison circumstances, our summary estimates can help inform public policy and public health initiatives, particularly in areas where reliable local information is lacking.

Since a few million prisoners worldwide probably have serious mental disorders (including several hundreds of thousands with potentially treatable psychosis or depression), the ability of prison health services in some countries to address these problems may well require review.

## Contributors

S Fazel and J Danesh drafted the report and were involved in study design, conduct, analysis, and interpretation.

## Conflict of interest statement

None declared.

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